Exhibit 2

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

In re Wells Fargo Mortgage Discrimination Litigation	Case No. 3:22-cv-00990-JD The Hon. James Donato **DECLARATION OF CARLYN IRWIN**

I, Carlyn Irwin, declare:

1. I am a Senior Advisor with Cornerstone Research, an economic and financial consulting firm where I serve as an expert witness and consultant.

2. I graduated with honors from the University of California at Santa Barbara where I earned my Bachelor of Arts degree. I have an MBA from the University of Southern California.

3. I am a Certified Public Accountant ("CPA") and I am Certified in Financial Forensics, Certified in Enterprise and Intangible Valuation, and Accredited in Business Valuation by the American Institute of Certified Public Accountants.

4. I have been retained by McGuireWoods LLP, counsel for Defendant Wells Fargo N.A. in this action. I understand that Winston & Strawn LLP is co-counsel to McGuireWoods.

5. I have personal knowledge of the facts stated in this declaration and, if called upon, could and would testify to the same. I submit this declaration in support of Wells Fargo's Opposition to Plaintiffs' Motion for Class Certification and in support of Motion to Exclude Testimony of Michael Wallace.

6. Attached as Exhibit A is a true and correct copy of my expert report that I submitted in this matter on March 22, 2024 rebutting Mr. Michael J. Wallace's affirmative report ("Wallace Report") in this action ("Expert Report of Carlyn Irwin" or "Irwin Report").[1] If called upon, I could and would testify to the opinions in said report.

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[1] All terms are either defined herein or can be found in the Irwin Report.

7. As set forth in Paragraphs 38–40 and Figures 3–4 of the Irwin Report, Mr. Wallace's assertion of damages for all Proposed Class Members is contradicted by Dr. Kurzendoerfer's findings. Accepting Dr. Kurzendoerfer's findings of approval rate differences after controlling for what she calls "key underwriting factors," and applying her posited marginal effects in approval rate across the proposed classes, results in only 14,949 of the proposed 119,100 class applications (12.6 percent) that would have been approved in the but-for world.[2] Stated conversely, 87.4 percent of those applications would still have been denied after accounting for White applicant denials and "key underwriting factors," even when accepting Dr. Kurzendoerfer's findings.

8. As set forth in Paragraphs 41–42 and Figure 5 of the Irwin Report, 49.0 percent of Proposed Class Members for whom Mr. Wallace asserts damages (i) did not meet the minimum criteria for the loan programs they pursued, (ii) had applications flagged as ineligible by Dr. Kurzendoerfer, or (iii) were denied because the loan products they sought were not available. Such applicants would not likely have qualified for Wells Fargo loans even absent any alleged lending discrimination. These included, for example, applicants who did not meet minimum credit score, LTV, or DTI requirements, or did not meet the net tangible benefit requirements imposed by federal law (as to FHA and VA loans) and many states' laws.

9. As explained in the Irwin Report, Mr. Wallace's calculation of damages for all denied Proposed Class Members is inconsistent with Plaintiffs' theory of harm, which alleges not that all Minority Applicants should have been approved but, rather, that they should have been approved in parity with White applicants.[3] As shown in Figure 4 of the Irwin Report, Dr. Kurzendoerfer's analysis indicates that the but-for additional approvals correspond to, at most, 14,949 but-for additional approvals, amounting to only 12.6 percent of the proposed class.[4] Mr. Wallace's analysis does not identify which of the class members represent the 14,949 but-for

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[2] Irwin Report, Figure 4.

[3] *See,* Irwin Report, ¶ 10, Section VIII.A.

[4] *See*, Irwin Report, Figure 4.

additional approvals, nor has he offered a method by which the trier of fact might make such a determination on a class-wide basis.[5] According to Mr. Wallace's analysis, which (if any) of the Proposed Class Members were indeed affected by alleged mortgage discrimination would have significant implications for an aggregate damages claim. As shown in Figure 1 of the Irwin Report, Mr. Wallace's calculated aggregate damages range from $357.3 million to $4.9 billion. Specifically, Mr. Wallace's calculated damages are as follows: 1-year cutoff damages total $357.3 million, 3-year cutoff damages total $1,516.4 million, 5-year cutoff damages total $2,338.2 million, 7-year cutoff damages total $1,657.6 million, 9-year cutoff damages total $2,128.2 million, and full-term damages total $4,867.6 million.[6] These values are taken directly from Mr. Wallace's damages calculations as set forth in the Wallace Report and supporting materials. In the supporting materials to his report, Mr. Wallace includes a calculation of total damages for each class in files Schedule CLASS-HELOC.xlsx, Schedule CLASS-HP.xlsx, and Schedule CLASS-REFI.xlsx. The totals represented in Mr. Wallace's excel files are a summation of both positive and offsetting negative damages.[7] These same values are represented in Figure 1 of the Irwin Report, and sum to $4.9 billion across the various proposed subclasses.

10. The Declaration of Michael Wallace in Support of Plaintiffs' Motion for Class Certification, ECF No. 205-15 ("Wallace Declaration") expresses additional opinions absent from his affirmative report, and additional opinions regarding my expert report and deposition testimony that I did not have an opportunity to address in my rebuttal report.

11. The Wallace Declaration claims Mr. Wallace "terminated [his] damages calculation at the date of the subsequent loan" for the "thousands of putative class members where Wells Fargo produced data that indicated a loan was obtained later, or elsewhere."[8] This assertion

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[5] *See* Irwin Deposition, 275:18–277:17.

[6] Irwin Report, Figure 1.

[7] *See* Wallace Report and Supporting Materials, Schedule CLASS-HELOC.xlsx, Schedule CLASS-HP.xlsx, and Schedule CLASS-REFI.xlsx, which are not attached here.

[8] Wallace Declaration, ¶ 13.

is misleading. For one, the "thousands of putative class members," for whom Mr. Wallace terminates damages comprises only 7 percent of Proposed Class Member loans.[9] Mr. Wallace therefore calculates full-term damages for over 90 percent of the Proposed Class.

12. As to why he calculates full-term damages for over 90 percent of the Proposed Class, Mr. Wallace reasons, "If the Wells Fargo produced data did not indicate a subsequent loan, I did not speculate whether the putative class member received a subsequent loan."[10] But Mr. Wallace's calculation of future damages requires speculation in either direction. Where Mr. Wallace did not have evidence of a subsequent loan, he chose to speculate that they did *not* receive, and never will receive, a subsequent loan.[11] Notably, he did not implement any reasonable adjustments to his damages calculation to reflect publicly available information on the propensity of borrowers to find loans elsewhere when rejected initially or on the holding periods of loans.[12] As described in my report, if allegedly improperly denied Proposed Class Members were creditworthy enough to have been approved at Wells Fargo if not for alleged discrimination, it stands to reason that they were similarly creditworthy enough to obtain loans from other lenders.[13] Mr. Wallace's analysis fails to take this into account.

13. Despite claiming that he was able to terminate damages for "thousands" of class members, Mr. Wallace has not provided a class-wide method for determining whether borrowers obtained loans outside of Wells Fargo. Indeed, in all but a single instance, the "thousands" of Proposed Class Members for whom Mr. Wallace terminates damages are those who subsequently obtained loans from Wells Fargo. Mr. Wallace has only identified one proposed class member, Ms. Kuykendall-Montoya, a named plaintiff regarding whom discovery has been taken, who

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[9] *See,* Wallace Report and Supporting Materials, Schedule CLASS-HP, Schedule CLASS-REFI, Schedule CLASS-HELOC, which are not attached here.

[10] Wallace Declaration, ¶ 13.

[11] Wallace Declaration, ¶ 13.

[12] Irwin Report, Section IX.A.

[13] Irwin Report, Section VIII.D.

obtained a loan at another institution.[14] The supporting materials to Mr. Wallace's report underscore that he did not undertake a systematic determination of whether denied borrowers obtained loans outside of Wells Fargo. In the backup files he provided, Mr. Wallace includes a manual adjustment to Ms. Kuykendall-Montoya's damages calculation, without identifying any source for this plaintiff-specific information.[15] His calculations do not utilize any class-wide information directly from Wells Fargo or others about Ms. Kuykendall-Montoya's subsequent approval, because no such produced data exist.

Executed this 23rd day of May, 2024.

By: Carlyn Irwin

Carlyn Irwin

[14] Deposition of Michael Wallace, March 26, 2024, , 48:11–49:4 (Q: Okay. Let's break that down. So for any of the named plaintiffs in this case, do you know which of them were approved for a loan after their purported denial by Wells Fargo? A: I believe Ms. Kuykendall-Montoya was approved for a loan after her denial by Wells Fargo. Q: And in calculating damages for Ms. Kuykendall-Montoya, did you consider that loan that she subsequently received? A: We considered it in terms of setting the end date for the damage calculation. But we did not, for example, determine if that loan was also—would have resulted in continuing damages.)

[15] *See,* Wallace Report and Supporting Materials, "B_WF_Data_Compilation_TMF.sql" at "—16 ADD FLAGS TO COMPILED TABLE," which is not attached here. I further note that the cutoff Mr. Wallace assigns to Ms. Kuykendall-Montoya's damages is December 2021, although the Amended Complaint states that Ms. Kuykendall-Montoya obtained a mortgage prequalification with another lender in August 2021. *See*, Amended Complaint, ¶ 69.

EXHIBIT A

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

In re Wells Fargo Mortgage Discrimination Litigation	Case No. 3:22-cv-00990-JD

EXPERT REPORT OF CARLYN IRWIN

March 22, 2024

Table of Contents

I. Qualifications

1. I am a Senior Advisor with Cornerstone Research, an economic and financial consulting firm where I serve as an expert witness and consultant. I have been retained as an expert witness and have provided testimony in federal and state courts, international arbitration, and other venues. As an expert and as a consultant, I have analyzed financial, economic, and accounting issues, prepared valuations and damages claims, and conducted financial forensic analysis. In doing so, I have worked on matters involving allegations of breach of contract, unfair business competition, false advertising, product liability, and fraud as well as cases involving intellectual property disputes, including patents, copyrights, trademarks, and trade secrets. Relevant to this matter, I have previously analyzed damages related to fair housing disputes, including if methodologies asserted by plaintiffs appropriately measure the economic damages. The scope of my work in that matter included claims of diversion of resources and frustration of mission. In addition, I have been retained by clients to analyze data to reconstruct financial records, estimate profitability, and assess the consistency and reliability of data. I have testified and previously qualified as an expert regarding damages, finance, accounting, and forensic accounting issues.

2. Prior to joining Cornerstone Research, I was employed as a litigation consultant with the accounting firm of PricewaterhouseCoopers (formerly Price Waterhouse) from 1994 to 2002. From 1992 to 1994 I served as the assistant controller for a law firm where I was primarily responsible for, among other things, maintaining the general ledger, producing the firm's financial statements, and assisting the executive committee with strategic analyses.

3. I graduated with honors from the University of California at Santa Barbara where I earned my Bachelor of Arts degree. I have an MBA from the University of Southern California. I am also a Certified Public Accountant ("CPA") and a Certified Fraud Examiner, and I am Certified in Financial Forensics, Certified in Enterprise and Intangible Valuation, and Accredited in Business Valuation by the American Institute of Certified Public Accountants. A current copy of my *curriculum vitae* is attached as **Appendix A**. Included in this appendix is a list of testimony I have provided during the last four years.

4. With respect to this matter, Cornerstone Research shall be compensated at $1,035 per hour for my time spent in preparation and support of my opinions, and Cornerstone Research

shall also be compensated for my colleagues who worked on this matter under my direction. Neither my compensation nor my colleagues' compensation is contingent or based on the content of my opinions or the outcome of this matter.

II. Professional Standards Applicable to My Work in This Matter

5. The American Institute of Certified Public Accountants publishes professional standards applicable to my work on this engagement. In general, those standards require CPAs engaged in litigation services to: (i) maintain integrity and objectivity; (ii) only undertake engagements that are expected to be completed with professional competence; (iii) exercise due professional care in performing the services; (iv) adequately plan and supervise the performance of the services; and (v) obtain sufficient relevant data to provide a reasonable basis for the conclusions.[1] I have complied with these professional standards in this engagement.

III. Assignment

6. At the request of counsel for Wells Fargo Bank ("Wells Fargo" or the "Defendant") in the above captioned litigation, I have been asked to review and comment as appropriate on the opinions expressed in the Expert Report of Michael J. Wallace dated February 29, 2024 ("Wallace Report") and the analyses underlying those opinions. Specifically, I have been asked to evaluate whether Mr. Wallace's proposed damages methodologies can reliably be used to calculate damages for Plaintiffs' proposed class ("Proposed Class"). I have further been asked to evaluate whether the damages calculations he has presented in his report reasonably reflect harm, if any, to members of the Proposed Class ("Proposed Class Members").

7. The opinions expressed in this report, including accompanying figures, are my opinions as of the date of this report. At the request of counsel for Wells Fargo, I may amend or supplement this report and the accompanying figures as a result of developments prior to or at

[1] American Institute of Certified Public Accountants, "Statement on Standards for Forensic Services No. 1, Effective For Engagements Accepted on or after January 1, 2020," https://assets.ctfassets.net/rb9cdnjh59cm/2EDeYHGw1qX4euTcLzQgKl/0003d5ed1b392705439ab0d616fae1fc/ssfs-no-1.pdf (Early application is permissible).

trial in this matter, including, but not limited to, the discovery of new evidence, expert discovery, and the testimony of other witnesses in deposition or at trial.

IV. Basis for Opinions

8. In conducting my analyses and forming my opinions, I have approached my work from an economic and financial perspective. I have relied on information from sources reasonably relied upon by experts in my field, as well as my own professional judgment and expertise. In addition, I have relied upon my education, experience, and training in accounting, finance, economics, and general business subject matters.

9. Specifically, I have relied on legal pleadings in this matter and produced data and documents. A complete list of the information I have relied upon in forming my opinions is attached as **Appendix B**. In addition to relying on produced data and documents, counsel for Wells Fargo has asked me to base my analyses on an assumption of liability with respect to the allegations pled in the Amended and Consolidated Class Action Complaint dated March 24, 2023 ("Amended Complaint"). I am not providing any opinion with respect to liability.

V. Summary of Opinions

10. Most of the damages Mr. Wallace calculates are for unharmed Proposed Class Members.

   a. While Mr. Wallace claims to calculate damages for "class members whose loan applications were *improperly denied* by Wells Fargo," his damages calculations are not limited to any such Proposed Class Members. Instead, Mr. Wallace calculates damages for all denied Proposed Class Members. Such a calculation is inconsistent with Plaintiffs' theory of harm, which alleges not that all Minority Applicants should have been approved but, rather, that they should have been approved in parity with White applicants. By asserting damages for all Proposed Class Members, Mr. Wallace ignores that most Proposed Class Member denials can be explained by the raw White applicant denial rate. *See* Section VIII.A.

   b. Further contradicting Mr. Wallace's damages claims for all Proposed Class Members, Plaintiffs' expert Dr. Kurzendoerfer's findings indicate that, at most, only

a small fraction of Proposed Class Members could have been harmed. Indeed, according to Dr. Kurzendoerfer's findings, after considering certain "key underwriting factors," Minority Applicant approval rates would have been, at most, 5.8 percentage points higher. This amounts to only 12.6% of Proposed Class Members being harmed based on Plaintiffs' expert's own analysis. *See* Section VIII.B.

c. That Mr. Wallace calculates damages for many Proposed Class Members who would have been denied even without alleged discrimination is supported by application data, which show that 49% of Proposed Class Members did not meet minimum qualifications for their loan programs. *See* Section VIII.C.

d. Mr. Wallace assumes without basis that Proposed Class Members did not obtain loans elsewhere. Even if Mr. Wallace had limited his damages calculations to allegedly improperly denied Proposed Class Members, his damages estimates would still include Proposed Class Members who were not actually damaged. This is because, based on Plaintiffs' claim that Proposed Class Members would have been approved at Wells Fargo but for discrimination, even improperly denied applicants (if any) would almost assuredly have been able to obtain loans from other lenders when they were denied by Wells Fargo. Further, neither he nor Plaintiffs have offered a way to distinguish between a properly denied and an allegedly improperly denied Proposed Class Member. *See* Section VIII.D.

11. Mr. Wallace's damages calculations grossly overstate the harm for allegedly improperly denied Proposed Class Members (if any) due to both (i) unreasonable assumptions that infect all of Mr. Wallace's damages calculations, and (ii) serious flaws in Mr. Wallace's calculations for each Proposed Subclass.

a. Mr. Wallace's damages calculations rely on at least two unreasonable assumptions that overstate damages for multiple of his claims. These two unsupported assumptions together comprise the majority of Mr. Wallace's damages claims.

i. First, Mr. Wallace assumes a world in which **all** Proposed Class Members would have held their loans to maturity if approved. However, such a world is not reasonable given historical data finding that, while the

average loan term is 30 years, the average mortgage holding period is under 10 years. While Mr. Wallace purports to calculate damages at various "cutoffs," Mr. Wallace has not offered an opinion as to which of these cutoffs applies to which Proposed Class Members, if any. *See* Section IX.A.

ii. Second, Mr. Wallace assumes that interest rates will remain at January 2024 levels for decades into the future. However, interest rates vary over time and are projected to decline substantially over the coming months and years relative to their recent highs. *See* Section IX.B.

b. Mr. Wallace's Proposed Refinance Subclass damages methodologies and calculations contain serious flaws.

i. For example, Mr. Wallace's Refinance Portion of Refinance Damages methodology cannot be used to reliably measure damages for Proposed Class Members in many common post-denial and but-for outcomes. These include situations in which Proposed Class Members would have obtained refinance loans from another lender, prepaid any portion of their existing mortgages, or sold their homes shortly after obtaining a refinance loan. Moreover, even for the Proposed Refinance Subclass Members who fit within Mr. Wallace's narrow theory of harm, damages are overstated by Mr. Wallace's calculation errors. For example, Mr. Wallace overstates the Refinance Portion of Refinance Damages by unnecessarily imputing the remaining term of a Proposed Class Member's existing loan and ignores Wells Fargo CORE data[2] setting forth the actual remaining loan term (which is generally less than his estimate). *See* Section X.A.1.

[2] CORE stands for "Common Opportunities, Results, and Experiences." It is used by Wells Fargo as its mortgage loan processing system. *See* Deposition of Bryan Martinez, August 10, 2023 ("Martinez Deposition"), 125:1–126:5. Mr. Wallace's analyses rely on a dataset built from CORE Data (WF-DATA-00000001–5, WF-DATA-00010970–76) ("CORE Data") and Home Mortgage Disclosure Act ("HMDA") data (WF-00000001, WF-00000002, WF-00035411) ("HMDA Data"). Mr. Wallace's analyses ignore CORE Data file WF-DATA-00010970, which contains the actual remaining loan terms. I used Williams Data Production Field List - 12-4-2023 Updated Version(182485150.1).xlsx as a data dictionary to join additional CORE Data and HMDA Data onto Mr. Wallace's Supporting Materials.

ii. Mr. Wallace's Cash-out Portion of Refinance Damages also suffers from serious flaws. First, Mr. Wallace's bond valuation theory of Cash-out Portion of Refinance Damages is not relevant for residential mortgage borrowers because Mr. Wallace has not articulated how, if at all, homeowners may realize a financial benefit purely from having a fixed cash loan when interest rates rise. Also, Mr. Wallace's Cash-out Portion of Refinance Damages methodology assumes, unreasonably, that Proposed Class Members would have used borrowed cash-out funds to make floating-rate loans, despite survey data that show only a minority of borrowers use cash-out proceeds to make investments at all. Even relative to his flawed theory of harm, Mr. Wallace overstates damages by, for example, calculating damages even for applicants who applied for adjustable-rate, rather than fixed-rate, loans and for applicants who did not apply for cash-out loans at all. *See* Section X.A.2.

c. Mr. Wallace's Proposed Home Purchase Subclass damages methodologies and calculations contain serious flaws.

i. Mr. Wallace's method for calculating the Home Appreciation Damages overstates damages because his calculation ignores the significant costs of buying, owning, and selling a home. Moreover, these costs are likely to depend on individual choices and circumstances, yet Mr. Wallace's damages methodology cannot account for many common post-denial outcomes, such as investing down payment funds into the stock market, incurring significant home repair expenses, or but-for outcomes such as losing the home in foreclosure. *See* Section X.B.1.

ii. Mr. Wallace's Home Purchase Financing Portion Damages methodology suffers from the same flaws as his Cash-out Portion of Refinance Damages methodology. But his methodology is even more nonsensical in the context of home purchase loans. Implicit in Mr. Wallace's damages theory is that Proposed Home Purchase Subclass Members failed both to obtain a home and to profit from a low fixed-rate loan (e.g., by not being

able to make a floating-rate investment) because they were denied. However, these two sources of harm are alternatives—one cannot both use a mortgage to purchase a home and also make a floating-rate investment with it. And indeed, home purchase applicants revealed their preferences to use mortgages to own homes, not to make floating-rate investments. *See* Section X.B.2.

iii. The flaws in Mr. Wallace's Home Purchase Financing Portion Damages methodology can be illustrated using Mr. Wallace's hypothetical home purchase loan applicant (Applicant #2). By considering several realistic scenarios, I show that Mr. Wallace's Home Purchase Financing Portion Damages methodology is unreliable and would tend to overstate damages. *See* Section X.B.3.

d. Mr. Wallace's HELOC damages are driven entirely by unsupported assumptions. For example, citing average national credit balances of 40%, Mr. Wallace assumes that *all* of the Proposed HELOC Subclass Members *immediately* draw 40% of their available balances and *immediately* fix their HELOC rates into a 10-year term. But the data Mr. Wallace cites do not say anything about the timing of borrower draw-down, and do not support the notion that all borrowers would immediately draw down 40% of their HELOC at origination and convert the advance amount into a fixed-rate loan. Without such an assumption, HELOC damages using Mr. Wallace's methodology would be zero. *See* Section X.C.

12. Mr. Wallace has not shown that any Proposed Class Member, including the two Named Plaintiffs he specifically discusses, Ifeoma Ebo and Terah Kuykendall-Montoya, meet the Proposed Restitution Subclass definition. Ms. Ebo is not a Proposed Class Member based on Plaintiffs' Proposed Class as defined in the Wallace Report, and Mr. Wallace's own Schedule CLASS-REFI.1 indicates that Ms. Kuykendall-Montoya was later approved for a loan for which Mr. Wallace claims she paid fees. *See* Section X.D.

VI. Background

A. Plaintiffs' Allegations

13. Plaintiffs allege that Wells Fargo has engaged in mortgage lending discrimination based on the race of its applicants. In their Amended Complaint, Plaintiffs allege:

> More specifically, non-white applicants for home loans from the defendants in this case—Wells Fargo Bank, N.A., Wells Fargo & Co., and Wells Fargo Home Mortgage (collectively, "Defendants" or "Wells Fargo")—had their applications intentionally and disproportionately denied, faced unjustified delays in the processing of their applications, and/or were given less favorable terms than similarly qualified white Americans. This was the result of Wells Fargo systematically engaging in a new form of redlining that harmed Plaintiffs and the Class based on their race and ethnicity.[3]

14. I understand from the Expert Report of Amanda R. Kurzendoerfer, Ph.D., dated February 29, 2024 ("Kurzendoerfer Report") and the Wallace Report that Plaintiffs intend to certify the Proposed Class, comprising three subclasses of non-White applicants ("Minority Applicants") who submitted their applications between January 1, 2018, and December 31, 2022 ("Proposed Class Period") to Wells Fargo (collectively, "Proposed Subclasses" or each "Proposed Subclass"):[4]

a. Refinance: All refinance Minority Applicants approved by an external Automated Underwriting System ("AUS") or Wells Fargo's Enhanced Credit Score ("ECS"), but who were ultimately denied ("Proposed Refinance Subclass" and "Proposed Refinance Subclass Members");

b. Home purchase: All home purchase Minority Applicants approved by an external AUS or Wells Fargo's ECS, but who were ultimately denied ("Proposed Home Purchase Subclass" and "Proposed Home Purchase Subclass Members"); and

c. Home equity line of credit: All home equity line of credit ("HELOC") Minority Applicants approved by Wells Fargo's AUS for HELOC products, but who were

[3] Amended and Consolidated Class Action Complaint, *In re Wells Fargo Mortgage Discrimination Litigation*, March 24, 2023 ("Amended Complaint"), ¶ 5.

[4] Dr. Kurzendoerfer's Proposed Class as defined in Figure 35 of the Kurzendoerfer Report differs from the "Class Definition" in the Amended Complaint. For the purposes of this report, I use the Proposed Class as defined in the Kurzendoerfer Report. *See* Kurzendoerfer Report, Figure 35; Amended Complaint, ¶¶ 155–162.

ultimately denied ("Proposed HELOC Subclass" and "Proposed HELOC Subclass Members").[5]

B. Overview of Kurzendoerfer Report

15. Dr. Kurzendoerfer was retained by counsel for Plaintiffs to "analyze whether there are differences in Wells Fargo's mortgage approval rates by race and ethnicity that are not explained by key underwriting factors."[6] Based on her work, she reported, in part, that her "analysis shows statistically significant race and ethnicity approval rate disparities that cannot be explained by key underwriting factors."[7] According to her report, these "key underwriting factors" consist of various borrower and property characteristics such as credit score, loan-to-value ("LTV") ratio, debt-to-income ("DTI") ratio, external AUS outcome, bankruptcy, foreclosure information, and nature of employment, among others.[8]

16. Dr. Kurzendoerfer reported differences in approval rates for Minority Applicants relative to White applicants after controlling for key underwriting factors for each of Plaintiffs' Proposed Subclasses as follows:[9]

a. Refinance: 1.6–5.8 percentage points lower.
b. Home purchase: 0.7–3.6 percentage points lower.
c. HELOC: 0.1 percentage point higher–4.3 percentage points lower.

C. Overview of Wallace Report

17. Mr. Wallace was retained by counsel for Plaintiffs to "(1) determine whether damages are capable of measurement on a class-wide (or subclass-wide) basis; (2) identify a reasonable method for calculating those damages; and (3) calculate damages for each putative class member on an individual basis based on [his] damages methodology."[10]

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[5] Expert Report of Michael J. Wallace, February 29, 2024 ("Wallace Report"), ¶ 34; Expert Report of Amanda R. Kurzendoerfer, Ph.D., February 29, 2024 ("Kurzendoerfer Report"), ¶ 6.
[6] Kurzendoerfer Report, ¶ 8.
[7] Kurzendoerfer Report, ¶ 10.
[8] Kurzendoerfer Report, ¶¶ 65, 72.
[9] Kurzendoerfer Report, Figure 34.
[10] Wallace Report, ¶ 2.

18. Mr. Wallace opines that "[t]he economic impact of Wells Fargo's improper denial of the loan applications can be reasonably calculated on a class-wide (or subclass-wide) basis using generally accepted financial principles for mortgage loans and common modeling techniques for measuring economic damages."[11] Mr. Wallace then purports to calculate damages for each of Plaintiffs' three Proposed Subclasses.[12] Mr. Wallace also calculates damages for a proposed "Restitution Class" that purportedly amounts to the "upfront non-refundable fees that [Proposed Class Members] would not have paid if they had known their loan applications would be improperly denied."[13] I provide a more detailed description of each of Mr. Wallace's damages calculations and methodologies in Section X below. Mr. Wallace's total calculated damages are as shown below:

[11] Wallace Report, ¶ 5.
[12] Wallace Report, ¶¶ 5, 34–37.
[13] Wallace Report, ¶ 19.

Figure 1
Summary of Mr. Wallace's Damages Calculations
($ in millions)

	No. Proposed Class Member Applications	Year 1 Damages	Year 3 Damages	Year 5 Damages	Year 7 Damages	Year 9 Damages	Full Loan Term Damages
Proposed Home Purchase Subclass							
Financing Portion Damages	23,286		$239.7	$618.1	$972.7	$1,264.5	$2,262.7
Home Appreciation Damages	10,847	$357.3	$1,063.8	$1,268.9			$1,287.9
Proposed Refinance Subclass							
Refinancing Portion Damages	77,937		$160.9	$289.3	$411.6	$509.3	$746.8
Cash-out Portion Damages	77,937		$73.2	$171.0	$259.7	$330.6	$545.2
Proposed HELOC Subclass	17,877		-$21.2	-$9.1	$13.5	$23.8	$25.0
Total	**119,100**	**$357.3**	**$1,516.4**	**$2,338.2**	**$1,657.6**	**$2,128.2**	**$4,867.6**

Source: Wallace Report and Supporting Materials, Schedule CLASS-HP, Schedule CLASS-REFI, Schedule CLASS-HELOC

VII. Framework for Assessing Damages for Credit Denials

19. In assessing Mr. Wallace's proposed damages methodologies and calculations, I first consider the typical framework for assessing damages that starts with an articulation of Plaintiffs' theory of harm, and then compare Proposed Class Members' economic state against what it would have been but for the alleged misconduct. Using this framework, I consider the economic benefits and costs of credit for Proposed Class Members. I describe this framework in more detail below.

A. But-for World Framework for Assessing Damages

20. A first step in calculating damages associated with alleged wrongful conduct is to conduct a loss causation analysis consistent with the plaintiff's theory of harm. Such an analysis is necessary to determine the effect, if any, on the plaintiff's economic condition that flows from the defendant's alleged conduct. According to the *Reference Manual on Scientific Evidence*:

> The first step in a damages study is the translation of the legal theory of the harmful event into an analysis of the economic impact of that event. In most cases, the analysis considers the difference between the plaintiff's economic position if the harmful event had not occurred and the plaintiff's actual economic position.
> …
> Because the but-for scenario differs from what actually happened only with respect to the harmful act, damages measured in this way isolate the loss of value caused by the harmful act and exclude any change in the plaintiff's value arising from other sources. Thus, a proper construction of the but-for scenario and measurement of the hypothetical but-for plaintiff's value by definition includes in damages only the loss *caused* by the harmful act.[14]

21. In other words, according to the *Reference Manual on Scientific Evidence*, a damages expert undertakes the following steps to calculate economic damages:

a. Explain the causal link between the alleged wrongdoing and the purported damages suffered by the plaintiff;

b. Construct a but-for world, which is the economic state that would have happened without the defendant's alleged wrongdoing (isolating the harm caused by the alleged misconduct from other potential intervening factors that could have caused harm to the plaintiff);

c. Calculate economic damages as the difference in the plaintiff's economic condition in the actual world as compared with the but-for world.

22. Evaluating Mr. Wallace's damages methodologies and calculations therefore requires an articulation of the economic position of Proposed Class Members if they had been approved for Wells Fargo loans and the economic positions they now find themselves in because they were denied.

B. The Economic Benefits and Costs of Credit

23. Evaluating the actual world outcome of denied applicants against their but-for economic condition if they had been approved requires consideration of the economic costs and benefits of housing-related credit.

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[14] Mark A. Allen et al., "Reference Guide on Estimation of Economic Damages," in *Reference Manual on Scientific Evidence*, eds. National Research Council Committees and Federal Judicial Center, Third Edition (Washington D.C.: The National Academies Press, 2011), p. 432 (emphasis in the original).

24. Debt provides an economic benefit and carries an economic cost. The economic benefit is access to funds that a borrower would not otherwise possess. There are many economic costs of debt including some form of ongoing interest expense.[15] This ongoing interest expense generates a second source of economic cost, which is risk.[16] For example, borrowers who use debt to finance a business enterprise must generate at least enough cash flow to cover their debt-related expenses. If borrowers cannot make debt payments for a period of time, they may lose the business altogether.

25. Whether a person is economically better off for having taken out a loan depends on the cash flows associated with that decision, which include both the total interest expense of the debt (which depends, in turn, on the interest rate of the loan) and on the economic value a borrower can derive from using the funds.[17] For example, using debt to start a successful business can create an economic benefit. By contrast, using debt to finance a poor-performing investment would not be economically beneficial. Even obtaining a loan only to hold onto the cash would be net-negative economically because the debt would not generate income to offset the interest cost.

26. The most common form of consumer debt in the United States is housing debt, typically in the form of residential mortgages.[18] Residential mortgages carry both economic benefits and economic costs like any other form of debt.[19] Generally, the benefit of housing debt is homeownership which, itself, carries certain costs that I discuss below. The cost of housing debt

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[15] Sandra D. Preston and Kathy Prochaska-Cue, "Credit Advantages, Disadvantages, and Common Types," *University of Nebraska-Lincoln NebGuide*, December 2007, https://extensionpubs.unl.edu/publication/g1802/pdf/view/g1802-2007.pdf.

[16] Christian Weller, "Debt Is On The Rise, Increasing Risks For Many Households," *Forbes*, December 26, 2021, https://www.forbes.com/sites/christianweller/2021/12/26/debt-is-on-the-rise-increasing-risks-for-many-households/ ("Debt is a … frequently necessary form of financing for many households. It comes with unique financial risks, such as the risk of losing a major source of income due to unemployment while still needing to repay that debt or of sharply higher interest rates.").

[17] Amy Gallo, "A Refresher on Net Present Value," *Harvard Business Review*, November 19, 2014, https://hbr.org/2014/11/a-refresher-on-net-present-value ("Net present value is the present value of the cash flows at the required rate of return of your project compared to your initial investment.… If the NPV is negative, the project is not a good one. It will ultimately drain cash from the business. However, if it's positive, the project should be accepted."); Sandra D. Preston and Kathy Prochaska-Cue, "Credit Advantages, Disadvantages, and Common Types," *University of Nebraska-Lincoln NebGuide*, December 2007, https://extensionpubs.unl.edu/publication/g1802/pdf/view/g1802-2007.pdf ("Credit almost always costs money. You have to decide if the item is worth the extra expense of interest paid, the rate of interest and possible fees.").

[18] Federal Reserve Bank of New York, "2023Q4 Quarterly Report on Household Debt and Credit," February 2024, https://www.newyorkfed.org/microeconomics/hhdc, p. 3.

[19] Wenli Li and Fang Yang, "American Dream or American Obsession? The Economic Benefits and Costs of Homeownership," Federal Reserve Bank of Philadelphia, 2010, https://www.philadelphiafed.org/-/media/frbp/assets/economy/articles/business-review/2010/q3/brq310_benefits-and-costs-of-homeownership.pdf.

includes monthly interest expense as well as the risks associated with collateralized debt—namely, that missed payments can result in foreclosure and loss of the home, which carries significant financial and non-pecuniary costs for homeowners.[20]

27. Whether housing debt creates an overall economic benefit depends on the circumstances of the borrower and the collateral.[21] For example, if the primary purpose of the housing debt is to acquire a home (i.e., a standard mortgage), whether the borrower benefits from such an acquisition depends in part on the price appreciation of the home over the period of ownership.[22] But it also depends on the many costs of homeownership for the borrower. An obvious such cost is the ongoing interest expense on the mortgage, but there are other "carrying costs" a homeowner will incur for the period of ownership, including maintenance costs, taxes, and insurance.[23] Further, because most loans require borrower equity at the time of origination, the benefits of homeownership also depend on the opportunity cost of the cash required for a down payment.[24] If the borrower could have used a down payment to make a lucrative investment instead of purchasing a home, the hypothetical returns on such an investment would be an opportunity cost of homeownership.[25] Lastly, a homeowner's realized return on homeownership also depends on transaction costs, including in the form of closing costs when a mortgage is originated and real estate broker fees when the home is sold.[26]

28. Homeowners can benefit from price appreciation. However, while price appreciation can increase a homeowner's equity in the home, this equity does not translate to a cash profit unless and until the home is sold.[27] In situations where homeowners have sufficient equity, lenders will sometimes allow homeowners to increase the debt on their home in the form of a cash loan (e.g.,

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[20] "Home Equity Loans and Home Equity Lines of Credit," *Federal Trade Commission,* December 2021, https://consumer.ftc.gov/articles/home-equity-loans-and-home-equity-lines-credit; A. Mechele Dickerson, "The Myth of Home Ownership and Why Home Ownership Is Not Always a Good Thing," *Indiana Law Journal* 84, no. 1, 2009, pp. 189–237 ("Dickerson (2009)") at pp. 209–210.

[21] Laurie S. Goodman and Christopher Mayer, "Homeownership and the American Dream," *Journal of Economic Perspectives* 32, no. 1, 2018, pp. 31–58 ("Goodman and Mayer (2018)") at p. 32; Dickerson (2009), p. 207.

[22] Goodman and Mayer (2018), p. 50.

[23] Goodman and Mayer (2018), p. 45.

[24] Goodman and Mayer (2018), p. 47; John P. Shelton, "The Cost of Renting versus Owning a Home," *Land Economics* 44, no. 1, 1968, pp. 59–72 at p. 62.

[25] Dickerson (2009), p. 210.

[26] Goodman and Mayer (2018), p. 51; "Understanding the Costs of Your Home," *Freddie Mac*, https://myhome.freddiemac.com/selling/costs-of-selling; Dickerson (2009), p. 218, footnote 159.

[27] Cornia Boar et al., "Liquidity Constraints in the U.S. Housing Market," *The Review of Economic Studies* 89, no. 3, 2022, pp. 1120–1154 at p. 1.

cash-out refinances or HELOCs).[28] Because these loans are collateralized by a person's home, they generally carry lower interest rates than other forms of unsecured consumer credit such as credit cards.[29]

29. As with any other forms of debt, however, whether a home equity–based loan provides a net economic benefit to a homeowner depends on what the homeowner decides to do with that equity. Ultimately, whether and to what extent any individual applicant would have been better off with access to home-related credit depends on the particular circumstances and individual choices of that applicant.

VIII. Most of the Damages Mr. Wallace Calculates Are for Unharmed Proposed Class Members

30. Among the most significant and consequential flaws in Mr. Wallace's damages calculations and methodologies is his failure to consider whether the Proposed Class Members for whom he calculates damages would have been approved but for Wells Fargo's alleged mortgage lending discrimination. While Mr. Wallace claims to calculate damages for "class members whose loan applications were *improperly denied* by Wells Fargo," his damages calculations are not limited to any such Proposed Class Members.[30] Instead, he includes **<u>all</u>** Proposed Class Members in his damages calculations.[31] By so doing, he asserts damages for many Proposed Class Members who likely would not have been approved even absent alleged lending discrimination and therefore would not be damaged.

31. In the following sections, I show that Mr. Wallace's inclusion of all Proposed Class Members in his damages assertions is inconsistent with Plaintiffs' theory of harm, which alleges

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[28] Consumer Financial Protection Bureau, "Older Americans Housing Guide: Using Home Equity to Meet Financial Needs," April 2023, https://files.consumerfinance.gov/f/documents/cfpb_jith-using-home-equity-guide.pdf, p. 10; "Home Equity Loans and Home Equity Lines of Credit," *Federal Trade Commission*, December 2021, https://consumer.ftc.gov/articles/home-equity-loans-and-home-equity-lines-credit#collateral.

[29] Diana Farrell et al., "Tapping Home Equity," JP Morgan Chase & Co., December 2020, https://www.jpmorganchase.com/content/dam/jpmc/jpmorgan-chase-and-co/institute/pdf/Institute-Home-Equity-Report-Executive-Summary-ADA.pdf, p. 10; Glenn B. Canner et al., "Recent Developments in Home Equity Lending," *Federal Reserve Bulletin*, 1998, pp. 241–251, https://www.federalreserve.gov/pubs/bulletin/1998/199804lead.pdf, at p. 241.

[30] Wallace Report, ¶ 8 (emphasis added).

[31] Wallace Report, ¶ 116, and Supporting Materials, Schedule CLASS-HELOC.xlsx, Schedule CLASS-HP.xlsx, Schedule CLASS-REFI.xlsx.

not that all Minority Applicants should have been approved but, rather, that they should have been approved in parity with White applicants.[32]

32. I further show that Mr. Wallace's damages calculations are even more overstated when considering the differences in applicant pools along Dr. Kurzendoerfer's "key underwriting factors."[33] Indeed, directly contradicting Mr. Wallace's damages calculations for all Proposed Class Members, Dr. Kurzendoerfer found that only a small fraction of the Proposed Class was denied at a higher rate than White applicants after controlling for "key underwriting factors."[34] Further, I explain that neither Mr. Wallace nor Plaintiffs have offered a way to distinguish between a properly denied and an allegedly improperly denied Proposed Class Member.

33. I then show that, consistent with Dr. Kurzendoerfer's findings that *most* Proposed Class Member denials relative to White applicant denials can be explained by both White applicant denial rates and "key underwriting factors," the Proposed Class Members (for whom Mr. Wallace calculates damages) include many applicants who did not meet minimum qualifications based on underwriting requirements of government-sponsored enterprises ("GSEs"). These applicants did not meet the minimum credit score, LTV, and/or DTI required by the programs for which they applied (e.g., conventional conforming loans).

34. Finally, I show that because Mr. Wallace assumes without basis that Proposed Class Members did not obtain loans elsewhere, even if Mr. Wallace had limited his damages calculations to allegedly improperly denied Proposed Class Members, his damages estimates would still include Proposed Class Members who were not actually damaged.

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[32] Amended Complaint, ¶ 160 ("The Denial Subclass: All Members of the Class whose applications were denied but would have been approved had such applications been submitted by similarly situated non-Minority Applicants.").

[33] Kurzendoerfer Report, ¶¶ 10, 88.

[34] Kurzendoerfer Report, ¶¶ 10, 88.

A. The Majority of Proposed Class Member Denials Can Be Explained by the Raw Denial Rate for White Applicants

35. Mr. Wallace's assumption that all Proposed Class Members were improperly denied and are therefore damaged is inconsistent with Plaintiffs' allegations and directly contradicted by a simple review of the denial rate for White applicants.[35]

36. Plaintiffs' core discrimination claim is that Wells Fargo denied Minority Applicants at a rate that exceeds the denial rate for White applicants.[36] In other words, Plaintiffs allege that, but for alleged lending discrimination, Minority Applicants would have been denied in parity with White applicants. Mr. Wallace has ignored that even absent any alleged discrimination some portion of Minority Applicants would have been denied, just as a portion of White applicants were denied.

37. Based on raw denial rates alone, and without adjusting for any differences in applicant pools, if Minority Applicants had been denied in parity with White applicants absent any alleged discrimination, then most of Plaintiffs' Proposed Class Members would have been denied even absent Wells Fargo's alleged lending discrimination. Therefore, Mr. Wallace necessarily overstates damages because any Proposed Class Members who would have been denied even absent any alleged discrimination are not damaged. To illustrate, Figure 2 below shows that whereas Black refinance applicants were denied at a rate of 35.7%, White applicants were denied at a rate of 19.8%, meaning that if Black applicants had been denied in parity with White applicants, 55.5% of the Black applicants who were denied would have been denied anyway. Thus, by considering even just the raw approval rate differences between Black applicants and White applicants, Mr. Wallace's assertion of damages for the full Proposed Class is overstated by more than a factor of two.

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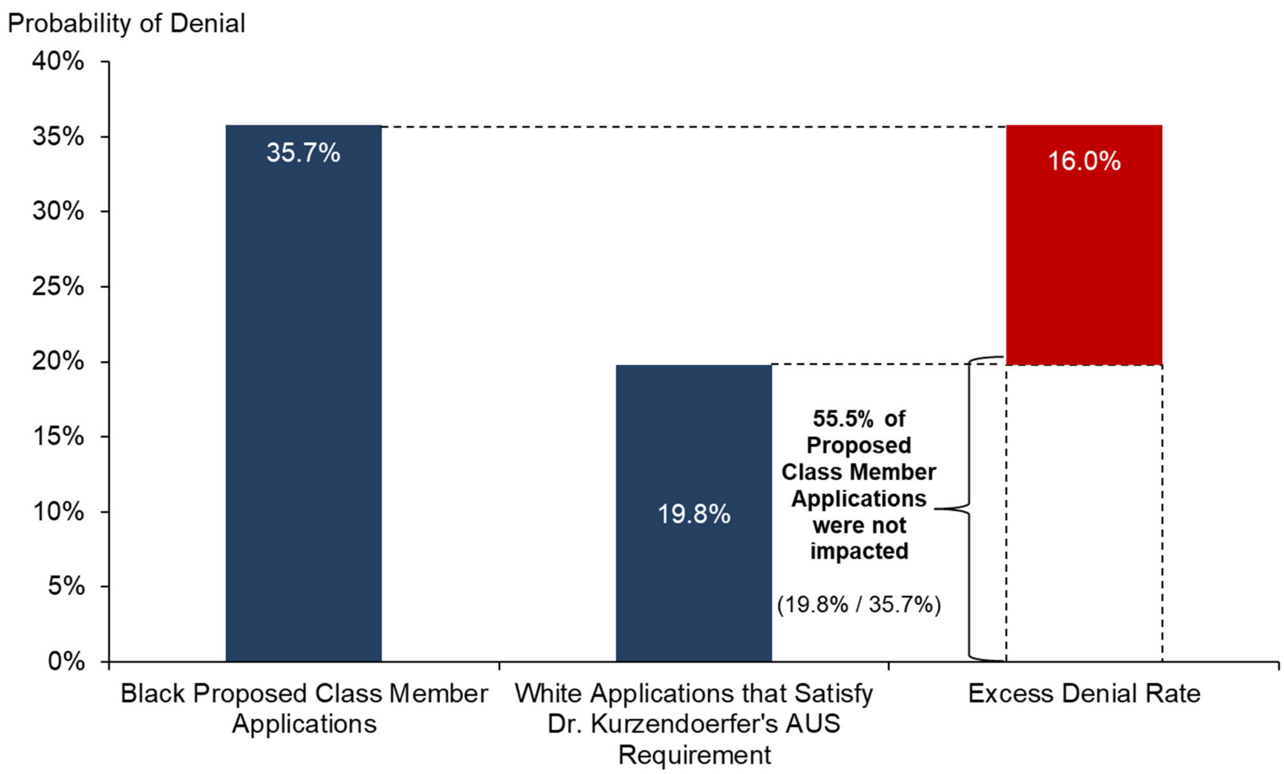
[35] *See*, *e.g.*, Wallace Report, ¶ 21 ("I have applied the formulas above, using data inputs produced by Wells Fargo for each class member, to calculate economic damages for each class member whose application for a refinance, home purchase, or HELOC loan was improperly denied by Wells Fargo. In conjunction with this report, I am producing tables that list for each individual class member the damages amounts that result from applying my damages formulas to the individual class members data inputs.").

[36] Amended Complaint, ¶ 5.

Figure 2
Raw Excess Denial Rate[1]
Black Proposed Refinance Subclass Members



Source: Kurzendoerfer Report and Supporting Materials

Note:
[1] The population is restricted to the Proposed Refinance Subclass Member applications identified in Kurzendoerfer Report.

B. Dr. Kurzendoerfer's Findings Indicate That, at Most, Only a Fraction of Proposed Class Members Could Have Been Harmed

38. Mr. Wallace's assertion of damages for all Proposed Class Members is further contradicted by Dr. Kurzendoerfer's findings. Dr. Kurzendoerfer's findings indicate that Proposed Class Members were only moderately less likely to be approved by Wells Fargo than White applicants after controlling for certain "key underwriting factors."[37] As illustrated in Figure 34 of her report, Dr. Kurzendoerfer reports approval rate differences ranging from a 0.1

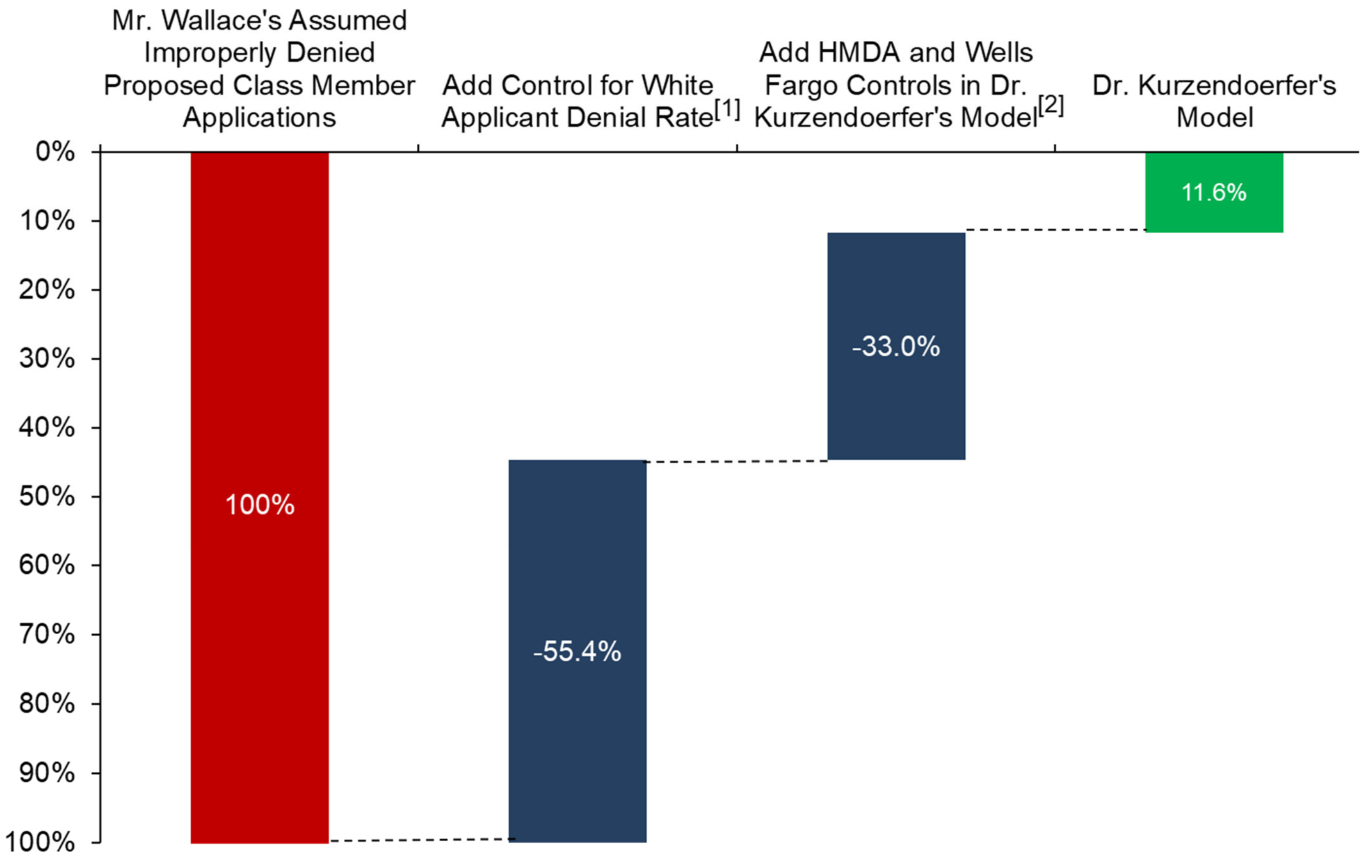
[37] Kurzendoerfer Report, ¶¶ 10, 88.

percentage point *higher* approval rate for the Proposed HELOC Subclass to a 5.8 percentage point lower approval rate for the Proposed Refinance Subclass.[38] Therefore, according to Dr. Kurzendoerfer's findings, only a fraction of Proposed Class Member denials cannot be explained by her "key underwriting factors."

39. In Figure 3 below, I show that, after considering the White applicant denial rate and controlling for Dr. Kurzendoerfer's "key underwriting factors," the portion of the Black refinance applicants whose denials cannot be explained is nearly 90% smaller than those in the total Proposed Class. As the figure illustrates, over half of denials of Black refinance applicants can be explained by White applicant denials (as noted above), and another third can be explained by differences in White and Black applicant pools, according to Dr. Kurzendoerfer's findings. Accordingly, Dr. Kurzendoerfer's findings indicate that no more than 12% of Black refinance applicants belonging to the Proposed Class were harmed by Wells Fargo's alleged lending discrimination. When compared with Dr. Kurzendoerfer's findings summarized in Figure 2 above, Mr. Wallace's calculations overstate damages nearly tenfold.

[38] Kurzendoerfer Report, Figure 34. Based on Figure 34 in the Kurzendoerfer Report, Asian, Other, and Joint HELOC applicants did not have a statistically significant difference in approval rate as compared to White HELOC applicants.

Figure 3
Proportion of Proposed Class Remaining
Using Dr. Kurzendoerfer's HMDA Data and Wells Fargo Controls
Black Refinance Applications



Source: Kurzendoerfer Report and Supporting Materials, Figure 34; Wallace Report, ¶ 35

Note:
[1] Calculated as the denial rate for Black refinance applications divided by the denial rate for White refinance applications.
[2] Calculated as the marginal effect for Black refinance applications in Kurzendoerfer Report, Figure 34, divided by the denial rate for Black refinance applications.

40. The effect is similar across all Proposed Subclasses. As shown in Figure 4 below, Dr. Kurzendoerfer's findings reveal that only 4.0% to 20.1% of Proposed Subclass denials remain unexplained after accounting for White applicant denials and "key underwriting factors." Across the entire Proposed Class, *this amounts to only 12.6%* of Proposed Class Members, as found by Plaintiff's own expert Dr. Kurzendoerfer.

Figure 4
But-for Minority Approval Rates According to Dr. Kurzendoerfer's Model

Category	Applications[1]	Approved	Denied (Proposed Class Member Applications)	Minority Approval Rate	MEs (Kurzendoerfer Fig. 34)[2]	But-for Minority Approval Rate	But-for Additional Approvals	Percentage of Proposed Class Member Applications
	[a]	[b]	[c] = [a] – [b]	[d] = [b] / [a]	[e]	[f] = [d] – [e]	[g] = -[e] * [a]	[h] = [g] / [c]
Refinance								
Black	52,039	33,436	18,603	0.64	-0.04	0.68	2,161	11.6%
Hispanic	96,491	62,989	33,502	0.65	-0.05	0.70	4,548	13.6%
Asian	63,070	48,209	14,861	0.76	-0.03	0.79	1,886	12.7%
Other	2,624	1,667	957	0.64	-0.06	0.69	153	16.0%
Joint	47,917	37,903	10,014	0.79	-0.02	0.81	787	7.9%
Total	262,141	184,204	77,937	0.70			9,536	12.2%
Home Purchase								
Black	22,751	18,734	4,017	0.82	-0.03	0.86	762	19.0%
Hispanic	46,986	39,156	7,830	0.83	-0.04	0.87	1,690	21.6%
Asian	70,268	62,456	7,812	0.89	-0.03	0.92	1,945	24.9%
Other	1,233	1,027	206	0.83	-0.02	0.86	31	14.9%
Joint	38,362	34,941	3,421	0.91	-0.01	0.92	262	7.7%
Total	179,600	156,314	23,286	0.87			4,689	20.1%
HELOC								
Black	4,262	1,815	2,447	0.43	-0.04	0.47	169	6.9%
Hispanic	11,710	4,781	6,929	0.41	-0.04	0.45	507	7.3%
Asian	11,700	6,102	5,598	0.52	0.00	0.52	0	0.0%
Other	488	239	249	0.49	0.00	0.49	0	0.0%
Joint	7,315	4,661	2,654	0.64	-0.01	0.64	48	1.8%
Total	35,475	17,598	17,877	0.50			724	4.0%
Proposed Class			**119,100**				**14,949**	**12.6%**

Source: Wallace Report and Supporting Materials; Kurzendoerfer Report and Supporting Materials, Figure 34

Note:
[1] Restricted to applications that were approved by an external AUS or Wells Fargo's ECS and where HMDA_Action_Taken equals 1, 2, or 3.
[2] Marginal effects ("MEs") for Asian and Other HELOC applicants are not statistically significant at the 90% confidence level as per Dr. Kurzendoerfer's Figure 34.

C. Mr. Wallace Asserts Damages for Applicants Who Did Not Meet Minimum Criteria for Approval

41. Based on my analysis shown in Figure 5 below, 49.0% of Proposed Class Members for whom Mr. Wallace asserts damages (i) did not meet the minimum criteria for the loan programs they pursued, (ii) had applications flagged as ineligible for sale to the GSEs by Dr. Kurzendoerfer, or (iii) were denied because the loan products they sought were not available. Such applicants would not likely have qualified for Wells Fargo loans even absent any alleged lending discrimination. These include at least the following applicants:

a. <u>Applicants who were ineligible for conventional conforming loans.</u> 37.1% and 30.7% of the Proposed Refinance Subclass and Proposed Home Purchase Subclass,

respectively, submitted applications for conventional conforming loans but did not meet the minimum criteria for such loans. For example, the GSEs require a minimum credit score of 620,[39] a maximum DTI of 50%,[40] and a maximum LTV of 97%.[41] Many Proposed Class Members fell outside these bounds or were missing credit score, DTI, and/or LTV data for conventional conforming loans. Such Proposed Class Members would not have been eligible for the conventional conforming loans for which they applied even without alleged lending discrimination.

b. <u>Applicants whose application was flagged as ineligible.</u> 30.0% of the Proposed Refinance Subclass had an application flagged as "ineligible" by Dr. Kurzendoerfer. These applications were flagged as such if they received an external AUS result corresponding to ineligibility, as defined in her production, and did not receive any external AUS results corresponding to eligibility, as defined in her production.[42]

c. <u>Certain cash-out refinance applicants.</u> 1.0% of the Proposed Refinance Subclass submitted a cash-out refinance application during a period when Wells Fargo was

[39] Fannie Mae, "Eligibility Matrix," February 27, 2018, https://singlefamily.fanniemae.com/media/5031/display ("Fannie Mae 2018 Eligibility Matrix"), p. 4; Freddie Mac, "Single-Family Seller Servicer Guide, Section 5202.4: Additional Requirements for Borrowers with Usable Credit Scores," November 9, 2016, https://guide.freddiemac.com/app/guide/section/5202.4; Freddie Mac, "Single-Family Seller/Servicer Guide," June 27, 2018, https://guide.freddiemac.com/ci/okcsFattach/get/1006782_2 ("Freddie Mac 2018 Single Family Seller/Servicer Guide"), pp. 5201-2, 5202-8. For this analysis, I counted Proposed Class Members whose application indicated a credit score less than 620. In instances in which a Proposed Class Member's credit score was not available, I used the co-applicant credit score if available. Generally, the lowest credit score threshold accepted by the GSEs during the Proposed Class Period was 620.

[40] Fannie Mae, "Selling Guide: Fannie Mae Single Family," April 3, 2018, https://singlefamily.fanniemae.com/media/5151/display, p. 504; Freddie Mac, "Single-Family Seller Servicer Guide, Section 5401.2: Monthly Debt Payment to Income Ratio," January 4, 2024, https://guide.freddiemac.com/app/servicing/section/5401.2; Freddie Mac 2018 Single Family Seller/Servicer Guide, p. 5401-12. For this analysis, I counted Proposed Class Members whose application indicated a DTI greater than or equal to 51%. Generally, the maximum DTI threshold accepted by the GSEs during the Proposed Class Period was 50%.

[41] Fannie Mae 2018 Eligibility Matrix, p. 2; Freddie Mac, "Single-Family Seller Servicer Guide, Section 4203.4: Maximum LTV, TLTV and HTLTV Ratios," February 7, 2024, https://guide.freddiemac.com/app/guide/section/4203.4; Freddie Mac 2018 Single-Family Seller/Servicer Guide, p. 4203-5. For this analysis, I counted Proposed Class Members whose application indicated an LTV greater than 97%. Generally, the maximum LTV threshold accepted by the GSEs during the Proposed Class Period was 97%.

[42] Kurzendoerfer Report and Supporting Materials.

not offering cash-out refinances for conventional loans (March 2020 until March 2021).[43]

d. Applicants who would not receive net tangible benefits from a refinance. 4.7% of the Proposed Refinance Subclass submitted applications to Wells Fargo and were denied because they did not meet net tangible benefit tests.[44] Federal laws governing the refinancing of FHA loans[45] and VA loans[46] and certain state laws[47] require lenders to determine that a refinance applicant will achieve a "net tangible benefit" through the proposed refinance before approving a loan. For example, VA refinances must meet at least one of the following conditions: (i) the new loan eliminates monthly mortgage insurance; (ii) the term of the new loan is shorter than the term of the loan being refinanced; (iii) the interest rate on the new loan is lower than the interest rate on the loan being refinanced; (iv) the payment on the new loan is lower than the payment on the loan being refinanced; (v) the new loan results in an increase in the borrower's monthly residual income; (vi) the new loan refinances an interim loan to construct, alter, or repair the primary home; (vii) the new loan amount is equal to or less than 90% of the reasonable value of the home; or (viii) the new loan refinances an adjustable-rate mortgage to a fixed-rate loan.[48]

[43] Deposition of Saba Dossani, October 5, 2023 ("Dossani Deposition"), Exhibit 60, WF-00134853–54 at 54. These observations are flagged as having a loan purpose of "32 – Cash Out Refinance" and application dates between March 20, 2020, and February 28, 2021. According to the U.S. Department of Defense, nearly all U.S. states declared a state of emergency related to COVID-19 as of March 19, 2020. *See* "Coronavirus: Timeline," *U.S. Department of Defense*, https://www.defense.gov/Spotlights/Coronavirus-DOD-Response/Timeline/.

[44] Applications that would not meet the net tangible benefit test were identified as those having denial reasons of "A refinance would not provide enough benefit compared to your current financing (We run a financial" or "A refinance would not provide enough benefit compared to your current financing (We run a federal fi".

[45] U.S. Department of Housing and Urban Development, "FHA Handbook 4000.1," August 9, 2023, https://www.hud.gov/sites/dfiles/OCHCO/documents/4000.1hsgh-080923.pdf, p. 455.

[46] 38 CFR § 36.4306.

[47] *See*, *e.g.*, Property of Docutech, "Net Tangible Benefit Matrix, State Requirements," February 2018, https://compliance.docutech.com/wp-content/uploads/sites/2/2018/03/Net-Tangible-Benefit-Matrix-2018.02.pdf.

[48] 38 CFR § 36.4306.

e. Applicants who sought products that were not available. 17.0% of the Proposed Refinance Subclass were denied for products that were not available at the time of application.[49]

42. As illustrated in Figure 5 below, the unique number of Proposed Class Members who belong to at least one of the above groups comprise 49.0% of Plaintiffs' Proposed Class.

[49] Applications for products that were not available at the time of application were identified as having denial reasons of "We do not offer the product or program requested." In addition, 617 (87.6%) of the Proposed Refinance Subclass applicants who submitted a cash-out refinance application during a period when Wells Fargo was not offering cash-out refinances for conventional loans (March 20, 2020, until February 28, 2021) are also included in this figure. *See* Workpaper 1. According to the U.S. Department of Defense, nearly all U.S. states declared a state of emergency related to COVID-19 as of March 19, 2020. *See* "Coronavirus: Timeline," *U.S. Department of Defense*, https://www.defense.gov/Spotlights/Coronavirus-DOD-Response/Timeline.

Figure 5
Proportion of Proposed Subclass Members with Potential Loan Disqualifiers

	Count of Proposed Subclass Members			Proportion of Proposed Subclass Members[1]		
	Refinance	Home Purchase	Total	Refinance	Home Purchase	Total
Potential Credit-Related Loan Disqualifiers						
Low Credit Score (< 620)[2]	6,985	302	7,287	9.4%	1.3%	7.5%
High DTI (>= 51%)[3]	17,763	4,449	22,212	24.0%	19.7%	23.0%
High LTV (> 97%)[4]	1,091	1,348	2,439	1.5%	6.0%	2.5%
Missing Credit Score, DTI, or LTV[5]	2,148	1,027	3,175	2.9%	4.5%	3.3%
Any Potential Credit-Related Loan Disqualifier	27,474	6,941	34,415	37.1%	30.7%	35.6%
Potential Non-Credit-Related Loan Disqualifiers						
External AUS System Flagged Loan as Ineligible[6]	22,217	3,856	26,073	30.0%	17.0%	27.0%
COVID-19 Pause In Offering Cash-out Refinances[7]	704	N/A	704	1.0%	N/A	0.7%
Declined Per the Net Tangible Benefit Test[8]	3,447	N/A	3,447	4.7%	N/A	3.6%
Declined Because the Product Was Not Offered[9]	12,583	1,995	14,578	17.0%	8.8%	15.1%
Any Potential Non-Credit-Related Loan Disqualifier	30,962	4,732	35,694	41.8%	20.9%	36.9%
Any Potential Loan Disqualifiers	**39,033**	**8,293**	**47,326**	**52.8%**	**36.6%**	**49.0%**

Source: Wallace Report and Supporting Materials; Kurzendoerfer Report and Supporting Materials; HMDA Data; CORE Data; Dossani Deposition Exhibit 60, WF-00134853–54

Note:
[1] Proportion of the Proposed Subclass Members is calculated based on the total number of applications in the respective Proposed Subclasses for whom Mr. Wallace asserts damages. Note that Mr. Wallace identifies the Proposed Subclass Members using Dr. Kurzendoerfer's Exhibit A and asserts damages for those who do not have a prior loan recorded at the same address. Mr. Wallace asserts damages for 73,990 Proposed Refinance Subclass Members and 22,636 Proposed Home Purchase Subclass Members.
[2] Includes conventional conforming loans with a credit score less than 620. Conforming loans are calculated using Dr. Kurzendoerfer's "f_conforming_limit" which denotes whether loans are less than or equal to FHFA-defined conforming loan limits for each year, county, and number of total units.
[3] Includes conventional conforming loans with a DTI greater than or equal to 51%.
[4] Includes conventional conforming loans with a LTV greater than 97%.
[5] Includes conventional conforming loans with missing credit score, DTI, or LTV data.
[6] Includes loans flagged as ineligible using Dr. Kurzendoerfer's "f_eligible" variable. This variable defines an "ineligible" application as an application that received an external AUS result corresponding to approval – ineligible and did not receive an external AUS result corresponding to approval – eligible.
[7] Includes conventional cash-out refinance loans applied for between March 20, 2020, and February 28, 2021. *See* Dossani Deposition Exhibit 60, WF-00134853–54 at 54.
[8] Includes applications with a DCLN_RSN_TXT_1, DCLN_RSN_TXT_2, DCLN_RSN_TXT_3, or DCLN_RSN_TXT_4 value of "A refinance would not provide enough benefit compared to your current financing (We run a financial" or "A refinance would not provide enough benefit compared to your current financing (We run a federal fi".
[9] Includes applications with a DCLN_RSN_TXT_1, DCLN_RSN_TXT_2, DCLN_RSN_TXT_3, or DCLN_RSN_TXT_4 value of "We do not offer the product or program requested."

43. Even while Dr. Kurzendoerfer's analysis has shown that allegedly improper denials correspond to, at most, a fraction of Plaintiffs' Proposed Class Members, as far as I am aware, Dr. Kurzendoerfer's model is not capable of determining which minority denials constitute improper denials (if any). Nor have Plaintiffs provided any way to differentiate between members of the Proposed Class who were allegedly improperly denied (i.e., would have been

approved if they were White) and those who were properly denied (i.e., would have been denied even if they were White).

D. Mr. Wallace Assumes without Basis That Proposed Class Members Did Not Obtain Loans Elsewhere

44. Even if Mr. Wallace had limited his damages calculations to allegedly improperly denied Proposed Class Members, his damages estimates would still include Proposed Class Members who were not actually damaged because even improperly denied applicants, if any, would likely have obtained loans from other lenders when they were denied by Wells Fargo. To illustrate, consider two applicants, Applicant A and Applicant B. Applicant A may have been declined by Wells Fargo for a purchase mortgage, but then approved the very next day by Bank of America. Applicant B may have foregone a refinance loan at the time of their initial application (e.g., in 2019), but continued to pay off their existing mortgage and refinanced at a later point at even more favorable terms with the same or different lender (e.g., in 2020). It is not clear that either borrower would be damaged, yet Mr. Wallace's methodology would calculate damages for these applicants as if these alternative loans did not exist.

45. As I discuss in greater detail below, none of Mr. Wallace's damages methodologies or calculations assume—or provide the flexibility to adjust for—applicants who were able to obtain equivalent loans in the actual world after being denied by Wells Fargo. Indeed, Mr. Wallace's methodology simply assumes that applicants have not found mortgage loans outside of Wells Fargo.

46. Mr. Wallace's assumption that allegedly improperly denied Proposed Class Members did not find alternative loans requires one of two conditions: (i) that applicants simply gave up after being denied by Wells Fargo, or (ii) that qualified Proposed Class Members were not able to find approval elsewhere. Neither of these is realistic.

47. That applicants simply gave up when they were denied by Wells Fargo is not a reasonable assumption. Agarwal et al. (2020) conducted empirical research on the propensity of mortgage applicants to apply to multiple lenders in search of approval and more favorable terms.[50] Using a dataset that matches mortgage origination data with credit inquiry data from

[50] Sumit Agarwal et al., "Searching for Approval," *National Bureau of Economic Research*, Working Paper 27341, 2020 ("Agarwal et al. (2020)"), https://www.nber.org/papers/w27341, p. 1.

credit reporting agencies, the authors show that an average mortgage applicant will undertake between 7.94 and 14.77 inquiries when they are seeking a mortgage loan.[51] For those applicants whose search ends in a mortgage origination, the vast majority also had multiple inquiries.[52] The number of inquiries among those applicants whose search ended in a loan origination ranges from 1.87 to 3.29 inquiries.[53] Further, Agarwal et al. (2020) show that, among those applicants whose search ended in a loan origination, Black borrowers search more compared to White borrowers on average.[54] In other words, rather than giving up after being rejected, Agarwal et al. (2020) find the opposite to be true—applicants are particularly likely to keep searching if they are denied.[55]

48. The propensity of applicants to search across multiple lenders for approval and/or favorable rates is also supported by Wells Fargo's own data. Indeed, 23.4% of Proposed Refinance Subclass applications were seeking to refinance loans that were not originated by Wells Fargo.[56] That is, nearly a quarter of the Proposed Refinance Subclass demonstrated a willingness to switch lenders to find approval or favorable rates.

49. Further, regulatory guidelines also encourage applicants to apply to multiple lenders. For example, the Consumer Financial Protection Bureau suggests that applicants contact multiple lenders, explore loan options, and compare specific loan offers.[57]

50. It is also not the case that qualified candidates could not have found approval elsewhere. Indeed, despite that the average applicant has approximately eight mortgage-related credit inquiries during their search for a mortgage loan, Agarwal et al. (2020) further find that well-qualified candidates need not search far to find loan approval. The authors report that,

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[51] Agarwal et al. (2020), Table 2. For the purposes of this analysis, I rely on Table 2, which analyzes loans segmented by whether the loan was originated during the housing boom of 2001–2006, the housing crisis of 2007–2009, or the housing recovery of 2010–2013. The authors note that the period of the COVID-19 pandemic, which was during the Proposed Class Period, was similar to the "tightened lending standards of the sort seen during the financial crisis of 2008." They also note that the model "allows us to speak to situations, much like in the aftermath of the financial crisis of 2008 as well as the recent Covid pandemic, where 'mortgages are cheap if you can get one.' In other words, the costs of mortgages are low, for example, because of non-traditional monetary policy, but the probability of any individual borrowed obtaining such mortgages declines." *See* Agarwal et al. (2020), pp. 5, 30.
[52] Agarwal et al. (2020), Figure 2.
[53] Agarwal et al. (2020), Table 2.
[54] Agarwal et al. (2020), Table 3.
[55] Agarwal et al. (2020), p. 3.
[56] Workpaper 2.
[57] "Contact Multiple Lenders," *Consumer Financial Protection Bureau*, https://www.consumerfinance.gov/owning-a-home/explore/contact-multiple-lenders/; "Request Loan Estimates from Multiple Lenders," *Consumer Financial Protection Bureau*, https://www.consumerfinance.gov/owning-a-home/compare/request-multiple-loan-estimates/.

conditional on receiving a mortgage loan, on average, applicants conduct only 3.29 inquiries.[58] This is supported by national survey data showing that in 2020, approximately 54% of applicants who were approved for a home purchase loan applied to two or more lenders.[59]

51. Agarwal et al. (2020)'s empirical findings contradict Mr. Wallace's assumption that Proposed Class Members simply gave up and/or were not able to find loans outside of Wells Fargo. The empirical evidence is particularly problematic for Mr. Wallace's assumptions considering the profile of applicants who, according to Dr. Kurzendoerfer, were likeliest to be affected by alleged lending discrimination. As noted above, Dr. Kurzendoerfer found that a small fraction of Proposed Class Member denials cannot be explained by certain key underwriting factors like DTI, FICO score, LTV, and others.[60] In other words, Dr. Kurzendoerfer's results imply that the portion of Proposed Class Members who were improperly denied, if any, were those who were otherwise qualified for loans. It is precisely these applicants who are likeliest to be approved by other lenders if, indeed, they were denied by Wells Fargo only because of alleged lending discrimination.

52. If allegedly improperly denied Proposed Class Members were creditworthy enough to have been approved at Wells Fargo if not for alleged discrimination, it stands to reason that they were similarly creditworthy enough to obtain loans from other lenders. Thus, based on Plaintiffs' claims, each Proposed Class Member should have been guaranteed approval at another lender with comparable or looser credit standards absent alleged discrimination.[61] Agarwal et al. (2020)'s findings show that for such applicants with a near-guaranteed probability of approval, roughly 80% make only three loan inquires or fewer, suggesting that Proposed Class Members would not need to conduct much additional search to find approval.[62]

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[58] Agarwal et al. (2020), Table 2.

[59] Robert B. Avery et al., "Appendix D: National Survey of Mortgage Originations Public Use File Select Weighted Tabulations, 2013–2020," National Mortgage Database Technical Report 2, March 3, 2023, https://www.fhfa.gov/DataTools/Downloads/Documents/NSMO-Public-Use-Files/NSMO-Select-Weighted-Tabulations-20230303.pdf, p. D-9.

[60] Kurzendoerfer Report, ¶¶ 10, 88.

[61] Note that Plaintiffs allege that purported lending discrimination at Wells Fargo is worse than other lenders. *See* Amended Complaint, ¶ 10 ("When compared to other lenders, which had approval rates of 71%, 79%, and 85%, respectively, for the same racial groups, Wells Fargo's statistics are stark.").

[62] Agarwal et al. (2020), Figure 9, Panel B.

IX. Common Flaws in Mr. Wallace's Damages Methodologies

53. While there are several flaws in each of Mr. Wallace's damages methodologies and calculations, as I describe in greater detail in Section X, there are two significant unsupported assumptions that account for the majority of Mr. Wallace's damages calculations and that commonly apply to multiple damages calculations. As I discuss in this section, these include (i) that all Proposed Class Members would have held their loans to maturity, and (ii) that interest rates will remain fixed at January 2024 levels for decades into the future.

A. Mr. Wallace Calculates Damages under an Unreasonable Scenario Where All Proposed Class Members Would Have Held Loans to Maturity

54. Mr. Wallace calculates damages under an assumption that all Proposed Class Members would have held their Wells Fargo loans all the way to term if they had been approved.[63] But such an assumption is contradicted by evidence that most people do not hold their loans to term. Although he also purports to calculate damages at various "cutoffs," Mr. Wallace has not offered an opinion as to which of these cutoffs applies to which Proposed Class Members, if any.

55. For each type of harm he asserts, Mr. Wallace calculates damages in the aggregate and by application at various "cutoffs" of one year, three years, five years, seven years, nine years, and the full loan term depending on the type of claim.[64] As to why Mr. Wallace lists damages by cutoffs, he explains:

> My formula enables a cutoff to the damages period based on facts or assumptions about the length of time a class member would have held onto [a but-for loan] had it not been improperly denied by Wells Fargo, as determined by the Court or trier-of-fact.[65]

56. While Mr. Wallace appears to offer a list of options from which the trier-of-fact may choose a damages figure for each Proposed Class Member, he has not actually calculated damages for any Proposed Class Members. That is, he has not offered an opinion as to which of these cutoffs applies to which Proposed Class Members, if any, or why. Mr. Wallace has not offered any framework that the trier-of-fact could use to make such a decision, nor has he

[63] Wallace Report, ¶¶ 64, 67, 82, 100.
[64] Wallace Report, ¶ 22.
[65] Wallace Report, ¶ 70.

articulated under which circumstances any Proposed Class Member would be subject to which cutoff. Mr. Wallace has not offered a method whereby the trier-of-fact may determine the length of time each Proposed Class Member would have held on to the loan if approved. Nor am I aware of any method for determining how long into the future a person would hold a mortgage if they had been approved for such a mortgage that does not require both individual inquiry and speculation.[66]

57. By calculating damages for all Proposed Class Members assuming a "full loan term," Mr. Wallace appears to suggest a world in which all Proposed Class Members hold their but-for loans all the way until maturity. Such a notion is not consistent with empirical evidence on the propensity of borrowers to hold loans.

58. Borrowers generally prepay their mortgages so that the average life of a mortgage is substantially less than the average term.[67] The lifespan of a mortgage is affected by a variety of factors: borrowers may refinance their loans, relocate, or default on the loan.[68] In general, mortgage prepayments are affected by a variety of factors, many of which "hav[e] nothing to do with interest rates or economic conditions."[69] Prepayments on a mortgage can be either voluntary or involuntary. Voluntary prepayments "are largely determined by borrowers' refinancing and relocation decisions."[70] Involuntary prepayments are due to defaults.[71] Prepayment rates exhibit wide variation based on factors that affect market-wide turnover, refinancing, and defaults.[72]

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[66] Importantly, Mr. Wallace's damages methodology provides options for the trier-of-fact only as to the length of time Proposed Class Members would have held on to but-for loans. However, there are many other individualized conditions that would affect the damages of denied Proposed Refinance Subclass Members that Mr. Wallace's model does not consider. For example, if denied Proposed Refinance Subclass Members are later approved for refinance loans by other lenders (in the actual world), thereby lowering their interest rate and potentially changing their loan terms relative to their prior loans, there is no mechanism in Mr. Wallace's damages methodology to account for this. Instead, as shown in Schedule 2.2 of his report, Mr. Wallace's damages method contemplates only a comparison between the loan for which Proposed Class Members applied but were denied and the loan they had prior to approval. Mr. Wallace does not provide a method for adjusting his calculations to reflect the fact that such borrowers are damaged less (if at all) because their actual world interest rates are lower.

[67] Lauren Nowacki, "The Average Mortgage Length in the U.S.," *Rocket Mortgage*, February 29, 2024, https://www.rocketmortgage.com/learn/average-mortgage-length.

[68] Sean Becketti, "The Prepayment Risk of Mortgage-Backed Securities," Federal Reserve Bank of Kansas City Economic Review, February 1989, https://www.kansascityfed.org/documents/1487/1989-The%20Prepayment%20Risk%20of%20Mortgage-backed%20Securities.pdf ("Becketti (1989)"), p. 49.

[69] Becketti (1989), p. 48.

[70] Andreas Fuster et al., "Mortgage-Backed Securities," Federal Reserve Bank of New York Staff Reports, February 2022, https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr1001.pdf ("Fuster et al. (2022)"), p. 10.

[71] Fuster et al. (2022), p. 10.

[72] Fuster et al. (2022), p. 13.

59. Although mortgages typically have 30-year terms, most borrowers do not keep the original mortgage for close to 30 years.[73] In fact, as described below, various sources suggest that the average length of a mortgage is under 10 years.[74] For example, the average lifespan of a 30-year FHA-insured mortgage is seven years.[75]

60. Consistent with these estimates, other research supports that the average borrower does not stay in the home for the full term of a loan. For example, the Fannie Mae Economic and Strategic Research Group reported that in 2021, average homeowner tenure was between seven and eight years.[76] Based on a 2024 report from Redfin, homeowner tenure peaked in 2020 at 13.4 years, and in 2024 is estimated to be 11.9 years.[77] Similarly, the National Association of Realtors conducted a survey on borrowers who had purchased a home between July 2020 and June 2021, which found that borrowers expected to live in their home for a median of 12 years.[78] Both reports noted significant differences in expected homeowner tenure based on factors such as buyer age and geographic location of the home.[79] For example, Redfin found that borrowers hold on to their homes the longest in California.[80]

61. Even the subset of loans that Mr. Wallace alleges Proposed Class Members would have been able to obtain at "historically low interest rates" would not all have been held to term.[81]

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[73] Lauren Nowacki, "The Average Mortgage Length in the U.S.," *Rocket Mortgage*, February 29, 2024, https://www.rocketmortgage.com/learn/average-mortgage-length.

[74] Lauren Nowacki, "The Average Mortgage Length in the U.S.," *Rocket Mortgage*, February 29, 2024, https://www.rocketmortgage.com/learn/average-mortgage-length; 87 Fed. Reg. 63 (April 1, 2022), p. 19038; Jaclene Begley and Mark Palim, "Mortgage Costs as a Share of Housing Costs – Placing the Cost of Credit in Broader Context," Fannie Mae Economic and Strategy Research Group, March 17, 2023, https://www.fanniemae.com/media/43026/display ("Begley and Palim (2023)"), footnote 8.

[75] 87 Fed. Reg. 63 (April 1, 2022), p. 19038. *See also* David W. Berger et al., "Mortgage Prepayment and Path-Dependent Effects of Monetary Policy," *National Bureau of Economic Research*, Working Paper 25157, 2020, https://www.nber.org/system/files/working_papers/w25157/w25157.pdf, footnote 51.

[76] Begley and Palim (2023), footnote 8.

[77] The Redfin report explains: "Home tenure for 2023 is defined as the number of years between the most recent sale of a home and December 1, 2023." *See* Dana Anderson, "Homeowners Today Stay In Their Homes Twice as Long as They Did in 2005, Driven Largely by Older Americans Aging in Place," *Redfin Real Estate News*, February 14, 2024, https://www.redfin.com/news/homeowner-tenure-2023/.

[78] National Association of Realtors, "2022 Home Buyers and Sellers Generational Trends Report," https://www.nar.realtor/sites/default/files/documents/2022-home-buyers-and-sellers-generational-trends-03-23-2022.pdf ("2022 NAR Home Buyers and Sellers Generational Trends Report"), p. 31. *See* 2022 NAR Home Buyers and Sellers Generational Trends Report, pp. 47, 116, 141.

[79] 2022 NAR Home Buyers and Sellers Generational Trends Report, p. 47; Dana Anderson, "Homeowners Today Stay In Their Homes Twice as Long as They Did in 2005, Driven Largely by Older Americans Aging in Place," *Redfin Real Estate News*, February 14, 2024, https://www.redfin.com/news/homeowner-tenure-2023/.

[80] Dana Anderson, "Homeowners Today Stay In Their Homes Twice as Long as They Did in 2005, Driven Largely by Older Americans Aging in Place," *Redfin Real Estate News*, February 14, 2024, https://www.redfin.com/news/homeowner-tenure-2023/.

[81] Wallace Report, ¶ 6.

When interest rates rise, as they did following the end of the Proposed Class Period, the prepayment rate will generally decline.[82] For example, BlackRock estimates that the average duration of the Bloomberg MBS Index had extended to 6.1 years in June 2023, compared to a low of 1.3 years in March 2020.[83] By the end of 2020, the duration had already increased to approximately 2 years.[84] A Prepayment Monitoring Report from the FHFA tracks three-month conditional prepayment rates, which "measure prepayments as a percentage of the current outstanding principal balance of the pool of loans backing a mortgage-backed security or cohort of those securities."[85] Even for 2020 and 2021 vintages with coupon rates of 2.5%, which is lower than coupon rates in the years prior to the COVID-19 pandemic, the prepayment percentages range from 13% to 27% as of Q1 2022.[86] This suggests that even with the lower interest rates during the COVID-19 pandemic, there is prepayment in the market. Mr. Wallace's opinion that applicants would have held their loan to term due to "historically low interest rates" during the Proposed Class Period is unfounded and belied by the data.[87]

62. Ultimately, the life span of a but-for mortgage for any individual Proposed Class Member is not known or easily knowable. Borrowers are not always able to predict when they will (or would have) paid off their mortgages. Further, the timing of prepayments may be related to events that are not perfectly predictable. For example, job changes may force borrowers to sell their homes and move, or interest rate declines may prompt another refinance, resulting in the payoff of the but-for loan. Mr. Wallace ignores all of these factors when calculating damages under the assumption that all Proposed Class Members would hold their mortgages to maturity. He does not explain how any of the aforementioned factors would affect his damages calculation, even though he states that damages "can be reasonably calculated on a class-wide (or subclass-wide) basis."[88]

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[82] Becketti (1989), p. 49.

[83] Justin Christofel, "Making the Move to Mortgage-Backed Securities," *BlackRock*, August 31, 2023, https://www.blackrock.com/us/financial-professionals/insights/mortgage-backed-securities.

[84] Justin Christofel, "Making the Move to Mortgage-Backed Securities," *BlackRock*, August 31, 2023, https://www.blackrock.com/us/financial-professionals/insights/mortgage-backed-securities.

[85] Federal Housing Finance Agency, "Prepayment Monitoring Report," 2022, https://www.fhfa.gov/AboutUs/Reports/ReportDocuments/Prepayment-Monitoring-Report_2022Q1.pdf ("FHFA 2022 Prepayment Monitoring Report"), p. 24.

[86] FHFA 2022 Prepayment Monitoring Report, p. 20.

[87] Wallace Report, ¶ 6.

[88] Wallace Report, ¶ 5.

B. Mr. Wallace's Assumption That Interest Rates Remain Fixed at January 2024 Levels Indefinitely Is Not Reasonable

63. Mr. Wallace's damages calculations erroneously assume that interest rates will remain fixed at their January 2024 levels throughout the remaining terms for all loans whose terms extend past this date.[89] In some cases, Mr. Wallace assumes interest rates will persist at this level for over 25 years into the future.[90] Interest rates vary over time and, as I explain below, are projected to decline substantially over the coming months and years relative to their recent highs. To the extent that rates decline in the future (as they are predicted to do), Mr. Wallace's damages calculations are substantially inflated. Indeed, as shown in Figure 6 below, the vast majority of certain of Mr. Wallace's damages claims rely on his flawed assumption regarding future interest rates.

64. Mr. Wallace's assumption that high interest rates will persist far into the future factors into his damages calculations in the following way. Mr. Wallace (erroneously) assumes that applicants who did not obtain cash-out, home purchase, or HELOC loans missed out on the opportunity to profit from rising interest rates for up to the full term of the loan for which they applied but were denied. However, given that interest rate information is not available into the future, Mr. Wallace simply assumes that interest rates will remain fixed at their January 2024 levels throughout the remaining term of the but-for loans, many of which would persist even into 2050.

65. The vast majority of the average but-for loan term is in the future, meaning that Mr. Wallace's unreasonable assumption has a significant effect on his overall damages calculation. In fact, as shown in Figure 6, *almost 90%* of Mr. Wallace's combined Home Purchase Financing Portion, Cash-out Portion of Refinance, and HELOC Damages estimate consists of future damages and therefore relies upon his assumption that interest rates will remain at January 2024 levels indefinitely. Mr. Wallace's damages calculation is highly sensitive to even modest declines in future interest rates.

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[89] Wallace Report and Supporting Materials, Schedules 2–9. Mr. Wallace calculates 10-year, 15-year, 20-year, and 30-year loan prevailing interest rates for refinancing, cash-out refinancing, home improvement or other purpose, and home purchase loans as of January 2024 that range from 6.059% to 7.493%. For HELOC loans, Mr. Wallace adds the individual loan margin to the prime rate as of January 2024, which is 8.5%.

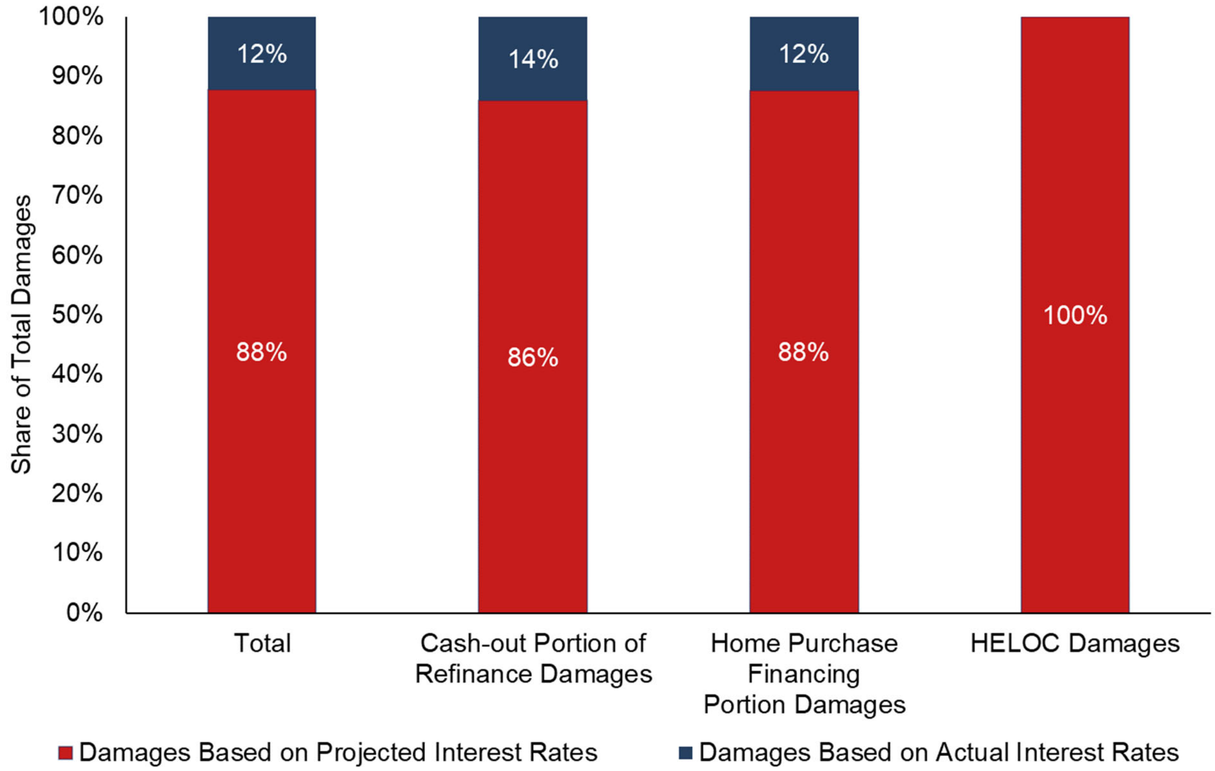
[90] *See*, *e.g.*, Wallace Report and Supporting Materials, Schedule CLASS-REFI.2. There are over 35,000 Proposed Refinance Subclass applications with a denied loan term of 30 years with an application date of 2019 or later. These applications represent 46% of the Proposed Refinance Subclass applications. *See* Workpaper 3.

66. For example, in Schedule 2 of his report, Mr. Wallace calculates damages for a hypothetical cash-out refinance applicant assuming the prevailing interest rate stays at 7.378% starting from January 2024. If this applicant were to hold the denied loan to term, Mr. Wallace calculates $6,148 in Cash-out Portion of Refinance Damages. If he had instead assumed that prevailing interest rates will be 1% lower (at 6.378%) beginning in January 2025, the Cash-out Portion of Refinancing Damages for this hypothetical applicant would have dropped 16.4% to $5,140.[91] The same is true for damages of a hypothetical applicant in Mr. Wallace's Home Purchase Financing Portion Damages. In Schedule 3A of his report, Mr. Wallace assumes that the prevailing interest rate would stay fixed at 6.743% beginning in February 2024. If he had assumed that prevailing interest rates would have been 1% lower at 5.743% beginning in January 2025, the Home Purchase Financing Portion Damages for this hypothetical applicant would drop 21.6% from $99,074 to $77,683 if the applicant held to term.[92] These examples demonstrate the extent to which the damages calculated by Mr. Wallace rely on his unreasonable prevailing interest rate assumption. Mr. Wallace offers no explanation for his assumption that rates would stay fixed at January 2024 values decades into the future.

[91] 6.378% is consistent with mortgage rate predictions for 2024. *See* Robin Rothstein et al., "Mortgage Rates Forecast for 2024: Experts Predict How Much Rates Will Drop," *Forbes*, March 14, 2024, https://www.forbes.com/advisor/mortgages/mortgage-interest-rates-forecast/. Workpaper 4.

[92] Workpaper 5.

Figure 6
Percentage of Mr. Wallace's Damages Based on Interest Rate Projections[1]



Source: Wallace Report and Supporting Materials

Note:
[1] Shares are based on Full Loan Term Damages. Damages for the Proposed HELOC Subclass Members amount to -$8.49 million for the portion of damages based on actual interest rates. As a result, 100% of the damages for the Proposed HELOC Subclass are based on future damages based on projected interest rates.

67. That interest rates are likely to fall in the future is not mere speculation. The Federal Open Market Committee ("FOMC") of the Federal Reserve System, which sets policy rates and publishes its expectations for where policy rates will be in the future, has forecasted interest rate declines. As of March 18, 2024, the current federal funds target range is 5.25%–5.50% and has

been since July 27, 2023.[93] However, the FOMC projects a federal funds target range midpoint of 4.65% by the end of 2024, 3.90% by the end of 2025, and 3.65% by the end of 2026.[94]

68. Economic policy institutions similarly forecast a decline in interest rates. As part of its World Economic Outlook, the International Monetary Fund ("IMF") published policy rate projections in October 2023. The IMF projected a federal funds rate of 5% by the end of 2024, 3.5% by the end of 2025, and 2.6% for all of 2027 and 2028, the end of the IMF's forecast range.[95]

69. The Organization for Economic Co-operation and Development ("OECD") projects short-term interest rates[96] to be 4.677% in Q4 2024 and 3.977% in Q4 2025, substantially below the 5.41% it recorded for November 2023.[97] Additionally, the OECD projects 10-year Treasury rates to be 4.35% in Q4 2024 and 4.00% in Q4 2025, substantially below the 4.50% it recorded for November 2023.[98]

70. In a February 2024 update to its "Economic Projections," the Congressional Budget Office projected the federal funds rate to drop to 4.7% in Q4 2024, 3.7% in Q4 2025, and between 2.9% and 3.0% from Q2 2027 up to the end of the forecast range in 2034.[99] Additionally, the Congressional Budget Office projects 10-year Treasury rates to drop to 4.8% in Q4 2024, 4.3% in Q4 2025, and 3.7% in Q4 2026 before gradually rising again to 4.1% by 2031.[100] According to data from the Brookings Institution, the increase in 30-year fixed

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[93] "Effective Federal Funds Rate," *Federal Reserve Bank of New York*, https://www.newyorkfed.org/markets/reference-rates/effr.

[94] "FOMC Summary of Economic Projections for the Fed Funds Rate, Range, Midpoint," *Federal Reserve Economic Data*, https://fred.stlouisfed.org/series/FEDTARRM.

[95] Data for Chapter 1 in "World Economic Outlook: Navigating Global Divergences," *International Monetary Fund*, October 2023, https://www.imf.org/en/Publications/WEO/Issues/2023/10/10/world-economic-outlook-october-2023#Chapters, Figure 1.16.

[96] Short-term interest rates are based on three-month money market rates where available.

[97] "Short-Term Interest Rates Forecast," *Organization for Economic Co-operation and Development*, https://data.oecd.org/interest/short-term-interest-rates-forecast.htm#indicator-chart; "Short-Term Interest Rates," *Organization for Economic Co-operation and Development,* https://data.oecd.org/interest/short-term-interest-rates.htm#indicator-chart.

[98] "Long-Term Interest Rate Forecast," *Organization for Economic Co-operation and Development*, https://data.oecd.org/interest/long-term-interest-rates-forecast.htm#indicator-chart; "Long-term Interest Rate," *Organization for Economic Co-operation and Development,* https://data.oecd.org/interest/long-term-interest-rates.htm#indicator-chart.

[99] "The Budget and Economic Outlook: 2024 to 2034," *Congressional Budget Office*, February 2024, CBO_51135-2024-02-Economic-Projections.xlsx.

[100] "The Budget and Economic Outlook: 2024 to 2034," *Congressional Budget Office*, February 2024, CBO_51135-2024-02-Economic-Projections.xlsx.

mortgage interest rates since 2022 has been "unusually high" relative to long-term Treasury securities, suggesting that "mortgage rates are being pushed up by more temporary factors."[101]

71. If interest rates fall in the future as expected, Mr. Wallace's damages calculations would not reliably measure harm to Proposed Class Members and, given that most of Mr. Wallace's damages occur in the future, his methods would substantially overcompensate the Proposed Class.

X. Each of Mr. Wallace's Damages Methodologies and Calculations Suffers from Serious Flaws

72. As explained above, the broad and overarching flaws in Mr. Wallace's approach result in overly inflated damages figures unsupported by Plaintiffs' own expert's findings. These flaws render Mr. Wallace's methodology unsupported and speculative. In this section, I discuss each of Mr. Wallace's damages methodologies and calculations, including the extent to which each methodology can be calculated on a class-wide basis and the extent to which each damages calculation reliably measures harm, if any, to the Proposed Class Members.

73. I also note that Mr. Wallace's damages methodology does not assign damages to multiple Named, Exemplar, and Discovery Plaintiffs. Mr. Wallace does not explain why the Plaintiffs who assert that they are "representatives of a nationwide class of similarly situated applicants" are not damaged under his methodology.[102] In Figure 7 below, I show that the majority of Named Plaintiffs are not damaged based on Mr. Wallace's own analysis.

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[101] Wendy Edelberg and Noadia Steinmetz-Silber, "High Mortgage Rates Are Probably Here for a While," *Brookings Institution*, November 16, 2023, https://www.brookings.edu/articles/high-mortgage-rates-are-probably-here-for-a-while/.

[102] Amended Complaint, p. 2.

Figure 7
Damages Assigned by Mr. Wallace to Named Plaintiffs [1]

Name of Applicant	Wallace Class Member No.[2]	Universal Loan Identifier	Loan Purpose	Wallace Report Full-Term Damages
Bryan Brown	38092	KB1H1DSPRFMYMCUFXT09DXG94581766178266195CTD58	Refinancing	$20,528.41
Christopher Williams	Not Included	KB1H1DSPRFMYMCUFXT09ZWK76957209846686609DWT16	HELOC	–
Elretha Perkins	60364	KB1H1DSPRFMYMCUFXT09HHF42682102747263448RXQ28	Refinancing	$55,331.67
Elretha Perkins[3]	66134	KB1H1DSPRFMYMCUFXT09GSW45797584523890611WZL69	Cash-Out Refinancing	–
Gia Gray	Not Included	KB1H1DSPRFMYMCUFXT09CLG40211656727656270VKD10	Home Purchase	–
Gia Gray	Not Included	KB1H1DSPRFMYMCUFXT09HPQ57310218411592240BPX80	Refinancing	–
Gia Gray	Not Included	KB1H1DSPRFMYMCUFXT09LPP67199141512352412CPK79	Refinancing	–
Ifeoma Ebo	Not Included	KB1H1DSPRFMYMCUFXT09XQC79358489090985774HVL82	Home Purchase	–
Paul Martin	Not Included	KB1H1DSPRFMYMCUFXT09VYM91049540078794096PNS62	HELOC	–
Terah Kuykendall-Montoya	56970	KB1H1DSPRFMYMCUFXT09RDM35564146297292991BNY74	Home Improvement	-$3,274.34

Source: Amended Complaint; Wallace Report and Supporting Materials, Schedule CLASS-REFI.xlsx, Schedule CLASS-HP.xlsx, Schedule CLASS-HELOC.xlsx; HMDA Data; CORE Data

Note:
[1] Aaron Braxton is also listed in the Amended Complaint as a Named Plaintiff, but was approved for his refinance loan and therefore would not be included in the Proposed Class under Plaintiffs' Proposed Class definition.
[2] Wallace Class Member No. is unique for each of the Proposed Home Purchase, Proposed Refinance, and Proposed HELOC Subclasses, but not unique across Proposed Subclasses.
[3] For this application, Mr. Wallace notes that he "excluded applications where a prior loan application for the same address was improperly denied by Wells Fargo to conservatively avoid potential double-counting." *See* Wallace Report and Supporting Materials, Schedule CLASS-REFI, Schedule CLASS-HP, Schedule CLASS-HELOC.

A. Refinance Damages

74. Mr. Wallace calculates two forms of damages for the Proposed Refinance Subclass: (i) Refinance Portion of Refinance Damages, and (ii) Cash-out Portion of Refinance Damages. I discuss each below.

1. Refinance Portion of Refinance Damages

75. For the Refinance Portion of Refinance Damages, Mr. Wallace defines damages as "the higher cost of the borrower's existing mortgage compared to the lower cost of the refinance loan that Wells Fargo improperly denied."[103] For this calculation, Mr. Wallace compares a borrower's existing loan against the loan for which the borrower applied but was denied for the full term of whichever loan has the longer term.[104] At each month, Mr. Wallace's damages calculation is a

[103] Wallace Report, ¶ 59.
[104] Wallace Report, ¶ 63.

sum of (i) the cumulative present value of differences in principal plus interest payments as of that month, and (ii) the differences in unpaid principal balance at the end of that month.[105]

76. Mr. Wallace's Refinance Portion of Refinance Damages suffer from at least two major flaws. First, his methodology does not reliably measure damages for many common post-denial outcomes. Second, even for those applicants whose post-denial outcomes follow the narrow theory of harm Mr. Wallace advances, damages are nevertheless overstated by his calculation methodology.

a) Mr. Wallace's Refinance Portion of Refinance Damages Methodology Does Not Reliably Measure Damages for Many Common Post-Denial Outcomes

77. Mr. Wallace's Refinance Portion of Refinance Damages methodology cannot be used to estimate damages for many typical post-denial applicant scenarios or many but-for outcomes, and therefore is unable to reliably measure damages on a class-wide basis.

78. As mentioned above, Mr. Wallace's damages methodologies provide flexibility only as to the length of time that Proposed Class Members would have held the Wells Fargo loan for which they applied but were denied. He does not offer a framework to accommodate any of the common ways in which a Proposed Class Member's behavior or outcomes would deviate from his narrow theory of harm. For example, Mr. Wallace's damages calculations assume that no members of the Proposed Refinance Subclass did—or will do—any of the following after being denied by Wells Fargo:

a. Obtained a refinance loan from another lender (as discussed in Section VIII.D above);
b. Prepaid any portion of their existing mortgage; and/or
c. Sold their home.

79. To assume that no member of the Proposed Class did or will do any of the above at any time prior to the maturity of their existing loans is an unreasonable and unsupported assumption

[105] *See* Wallace Report and Supporting Materials, Schedule 2, Schedule 2.1.

given that the average remaining term was 206.8 months (17.2 years) according to Mr. Wallace's damages methodology.[106]

80. To illustrate how Mr. Wallace's damages methodology would fail to reliably calculate (and indeed would overstate) damages for many common post-denial scenarios, I illustrate several such examples in Figure 8 below. However, it is still important to note that, to calculate these scenarios for the Proposed Class Members, Mr. Wallace would need individual information regarding each Proposed Class Member's post-denial choices and behavior.

Figure 8
Refinance Portion of Refinance Damages, Full Loan Term Cutoff
Hypothetical Damages in Several Realistic Scenarios

		Alternative Realistic Scenarios		
	Wallace Methodology	**New Loan[1]**	**Prepay[2]**	**Sold After 1 Year[3]**
Discounted Cash Flow in Actual World	$232,736	$233,583	$231,938	$219,638
Discounted Cash Flow in But-for World	$213,256	$225,313	$217,416	$221,472
Damages	**$19,481**	**$8,270**	**$14,523**	**-$1,834**
Percent Decrease in Damages		*57.5%*	*25.5%*	*109.4%*

Source: Wallace Report and Supporting Materials, Schedule 2

Note:
[1] Figure assumes that Applicant #1 was able to refinance the loan in the actual world in January 2022 (i.e., one month after the first assumed payment was made on the loan per Wallace Report, Schedule 2.2). I assume Applicant #1 was able to refinance at the "prevailing interest rate" of 4.049% for January 2022 per Wallace Report, Schedule 2.4. Using Mr. Wallace's methodology, I discount cash flows in the actual world and but-for world at the interest rate on the actual loan, 4.625%.
[2] Figure assumes that Applicant #1 prepays an additional $200 of principal each month in the actual world and but-for world.
[3] Figure assumes that Applicant #1 sells the house after one year and uses the proceeds from the sale to pay off the loan at that time in both the actual world and but-for world.

81. Mr. Wallace calculates damages for Applicant #1 of $19,481 under a full loan term cutoff based on the difference between the discounted cash flows Applicant #1 would have paid in the but-for world and in the actual world. I summarize this in the first column of Figure 8, labeled "Wallace Methodology." In the next three columns, I calculate what damages should be under Mr. Wallace's theory of harm for three realistic scenarios. These damages cannot be calculated simply by choosing one of Mr. Wallace's cutoffs or by adjusting his methodology slightly.

[106] The 206.8 months average is calculated based on Mr. Wallace's existing remaining loan term field. Using the prior loan remaining term field in the CORE Data, the average remaining term for the Proposed Refinance Subclass is 126.0 months (10.5 years). Observations where the prior loan remaining term field in the CORE Data is less than three months or greater than or equal to 500 months are treated as not available in the data. This aligns with Mr. Wallace's methodology of identifying outliers, which he then assumes to be equal to the applied-for loan term. *See* Workpaper 6; Wallace Report and Supporting Materials.

Rather, for each scenario, a separate, individualized calculation of damages must be performed that accounts for the realistic outcomes Proposed Class Members may have faced.

82. In the "New Loan" column, I assume that Applicant #1 was actually able to refinance from an alternative lender one month after being denied by Wells Fargo. Taking, as an illustration, Mr. Wallace's prevailing interest rates, Applicant #1's interest rate on the new refinance loan would have been 4.049%.[107] Mr. Wallace's damages methodology only allows for a comparison between the denied loan and the applicant's existing loan at the time of the denial—not any loans that Proposed Class Members may have obtained after being denied by Wells Fargo. However, in the scenario described here, such a comparison is irrelevant because in the actual world the existing loan at the time of denial had been refinanced at a lower rate. I recalculate damages under the realistic scenario described above by comparing the difference in discounted cash flows between the refinanced loan in the actual world and the denied loan in the but-for world. Based on this calculation, damages would decrease by 57.5% from $19,481 to $8,270.

83. In the "Prepay" column, I assume that Applicant #1 prepays $200 of her remaining principal balance every month in both the actual world and but-for world. Having been unable to obtain a refinance from Wells Fargo, Applicant #1 may reasonably look to pay down her mortgage faster to reduce future interest payments. By doing so, the gap in cash flows between the actual world and but-for world narrows. In this scenario, damages decrease by 25.5% from $19,481 to $14,523.

84. Finally, in the "Sold After 1 Year" column, I assume that Applicant #1 sells her house and moves in both the but-for and actual world scenarios. This could occur in both the but-for and actual worlds for a multitude of reasons, for example, needing to move for a job. In this example, refinancing her loan has a negative financial return because Applicant #1 had to incur $3,532 in refinancing fees and did not have enough mortgage payments at the lower interest rate in order to recoup those fees.[108] Thus, when I recalculate damages under this realistic scenario, damages become negative.

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[107] Wallace Report and Supporting Materials, Schedule 2.4, "Prevailing Interest Rate" as of January 2022.
[108] Wallace Report and Supporting Materials, Schedule 2.6, "Estimated Fees."

b) Mr. Wallace's Calculations Overstate the Refinance Portion of Refinance Damages

85. Even for the set of applicants who fit Mr. Wallace's narrow theory of harm (i.e., no alternative loan, no prepayments, no early home sales), if any, Mr. Wallace's damages methodology overstates damages for multiple reasons.

86. First, Mr. Wallace overstates the Refinance Portion of Refinance Damages for these applicants by unnecessarily imputing the remaining term of a Proposed Class Member's existing loan and ignoring Wells Fargo CORE Data setting forth the actual remaining loan term (which is generally less than his estimate).[109]

87. When calculating the remaining term on a borrower's existing loan, Mr. Wallace ignores available CORE Data that specifically indicate the remaining term, and instead imputes the existing loan terms of the Proposed Refinance Subclass from other information (e.g., existing interest rate, remaining loan balance, and monthly payment and interest amount) or, in some cases, relies on assumptions where the data are not available. By so doing, Mr. Wallace calculates existing loan terms that are longer than the loan terms listed in the CORE Data, thereby inflating his damages estimates.[110] As a result, for cash-out refinance applicants, Mr. Wallace's calculations imply that Proposed Class Members apply for loan terms that are 2.2 times longer than their existing loan terms, whereas according to the CORE Data, applicants actually applied for loan terms that are substantially longer—3.3 times longer than their existing loan terms.[111] For refinance-only applicants, Mr. Wallace finds that applicants applied for loan terms that were 1.5 times longer than their existing loan terms, whereas the CORE Data suggest that applicants applied for terms that were 2.3 times longer than their existing loan terms.[112] For

[109] CORE stands for "Common Opportunities, Results, and Experiences." It is used by Wells Fargo as its mortgage loan origination system. *See* Martinez Deposition, 125:1–126:5.

[110] Mr. Wallace calculates the remaining loan terms of existing loans by using the existing interest rate, remaining loan amount, and prior loan monthly principal and interest payment fields, when available in the data. When the calculated remaining loan term is less than three months or greater than or equal to 500 months, he assumes the remaining loan term is equal to the applied-for loan term. When one or more of the inputs to the calculation are unavailable, he assumes the remaining loan term to be equal to the applied-for loan term. *See* Wallace Report and Supporting Materials, Schedule 2.6, Schedule CLASS-REFI.

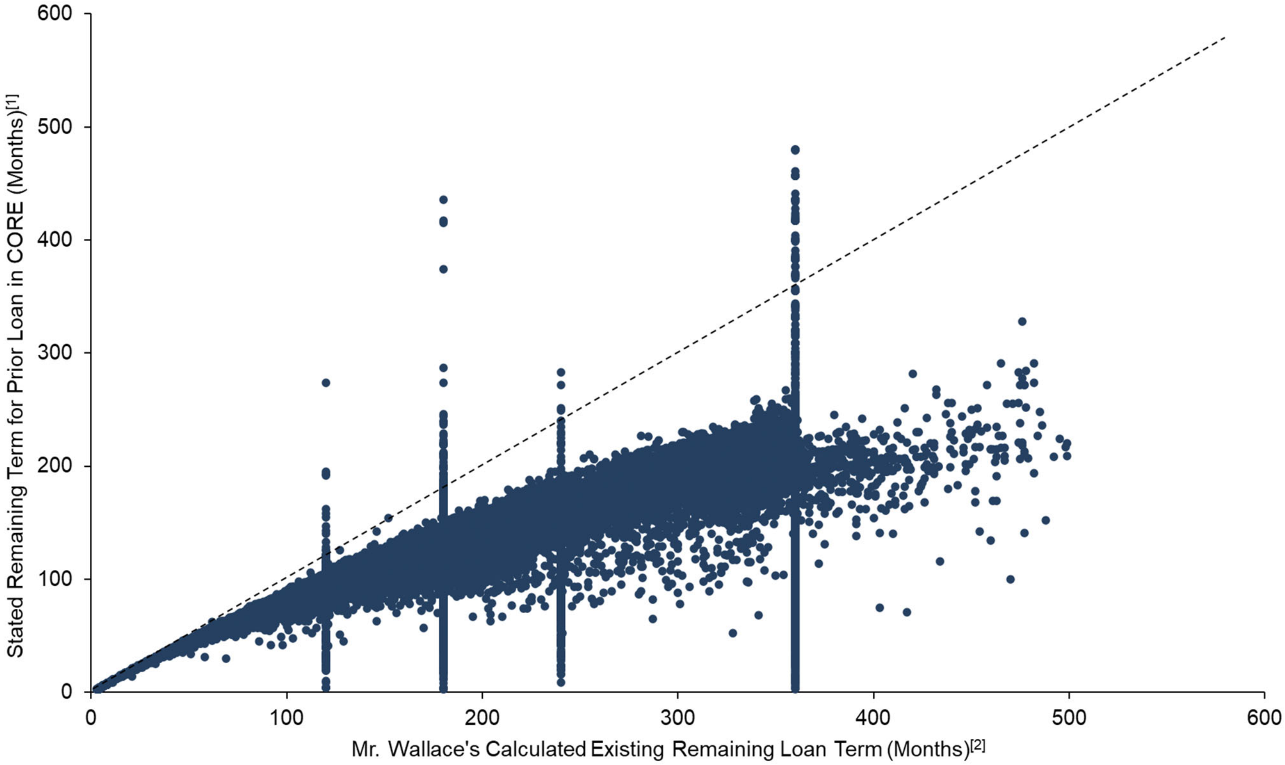
[111] Observations where the prior loan remaining term field in the CORE Data is less than three months or greater than or equal to 500 months are treated as not available. This is the same as Mr. Wallace's methodology of identifying outliers. This analysis does not include applications with the loan purpose of "2 – Home improvement" or "4 – Other Purpose" as these applications do not have prior_loan_remaining_term data. *See* Workpaper 7. The average ratios of denied loan terms to existing loan terms are calculated by taking the ratio of all observations' denied and existing loan terms and then finding the average of these ratios.

[112] Workpaper 7.

75% of applicants in the Proposed Refinance Subclass, Mr. Wallace calculates a remaining loan term at least 28 months longer than the term reported in the CORE Data.[113] Figure 9 shows the relationship between the existing loan term that Mr. Wallace calculates and the existing loan term from the CORE Data. Mr. Wallace's calculated existing loan term overestimates the existing loan term for nearly all applications when compared to the values in the CORE Data.

[113] Workpaper 8.

Figure 9
Relationship between Mr. Wallace's Calculated Existing Loan Term and Prior Loan Remaining Term in the CORE Data



Source: Wallace Report and Supporting Materials; CORE Data

Note:
[1] Observations where the prior loan remaining term is less than three months or greater than or equal to 500 months are treated as NA for this analysis. In total, 20% of Universal Loan Identifiers ("ULIs") from Mr. Wallace's Proposed Refinance Subclass Members are excluded from this analyses due to NA prior loan terms.
[2] The vertical lines in the chart can be attributed to instances where Mr. Wallace assumes the existing remaining loan term to be equal to the applied-for loan term because at least one of the inputs needed for the calculation of existing loan term (prior loan interest rate, prior loan unpaid balance amount, and prior loan monthly principal and interest amount) is unavailable in the data.

88. Mr. Wallace's erroneous estimation of existing loan terms impacts the Refinance Portion of Refinance Damages calculated for each Proposed Class Member.[114] For example, Mr.

[114] Existing loan term is only used in Mr. Wallace's Refinance Portion of Refinance Damages. It does not affect Mr. Wallace's calculation of Cash-out Portion of Refinance Damages.

Wallace calculates Refinance Portion of Refinance Damages for one applicant with the following loan characteristics:[115]

Figure 10
Example Refinance Applicant A

	Existing Loan		
Loan Characteristics	**Mr. Wallace**	**Re-Calculated**	**Applied-for Loan**
Loan Amount [1]	$123,477	$123,477	$132,000
Interest Rate [2]	5.87%	5.87%	4.75%
Monthly Principal and Interest Payment in CORE Data [3]	$1,432	$1,432	$853
Calculated Monthly Principal and Interest Payment [4]	$875.36	$1,762.33	$815
Loan Term [5]	240 Months	86 Months	240 Months
Full Loan Term Refinance Portion of Refinance Damages	$10,923	$593	

Source: Wallace Report and Supporting Materials; CORE Data

Note:
[1] The existing and applied-for loan amounts are from CORE Data.
[2] The 5.87% existing loan interest rate is calculated by Mr. Wallace. For this calculation, Mr. Wallace adds his calculated average difference between the existing interest rate and applied-for interest rate for refinance applications during the Proposed Class Period to the applied-for interest rate. The 4.75% applied-for interest rate is calculated by Mr. Wallace using the applied-for loan amount, applied-for monthly principal and interest payment from the CORE Data, and the applied-for loan term.
[3] These monthly principal and interest payments are from the CORE Data.
[4] These monthly principal and interest payments are calculated based on the existing loan amount, existing interest rate, and the existing remaining loan terms. Mr. Wallace relies on his assumed loan term of 240 months, whereas I rely on the prior loan remaining term field from the CORE Data for this calculation (86 months). Mr. Wallace calculates the monthly principal and interest payment for the applied-for loan based on the Refinance Portion of Refinance Damages, the applied-for interest rate, and the applied-for loan term.
[5] Because the prior loan interest rate from the CORE Data is NA for this ULI (KB1H1DSPRFMYMCUFXT09DYZ93995058354384828HXD26), Mr. Wallace assumes the existing remaining loan term to be equal to the applied-for loan term (240 months).

89. Using his assumed existing loan term of 240 months, Mr. Wallace calculates Refinance Portion of Refinance Damages at full loan term for this applicant as $10,923. Using the actual existing loan term as available in the CORE Data of 86 months, the Refinance Portion of Refinance Damages would decrease by over 94% to $593.[116]

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[115] The monthly principal and interest payments shown in Figure 10 and Figure 11 are from the CORE Data. Mr. Wallace relies on the prior loan monthly principal and interest field, when available, to calculate the existing remaining loan term. The existing loan monthly principal and interest payment is then re-calculated using the existing loan interest rate, the existing loan remaining term that he calculated, and the existing loan amount. The calculated existing loan principal and interest payment is used in his damages calculation. Similarly, he re-calculates the principal and interest payment for the applied-for loan based on the "refinance portion," or "cash-out portion," of the applied-for loan amount, the applied-for interest rate, and the applied-for loan term. I follow this methodology for the purpose of these examples.
[116] $10,923 – $593 = $10,330. $10,330 / $10,923 = 94.6%.

90. Similarly, for a different applicant, Mr. Wallace's Refinance Portion of Refinance Damages would decrease by 33.7% if he had used the available CORE Data.[117] This applicant applied for a loan with the following loan characteristics:

Figure 11
Example Refinance Applicant B

Loan Characteristics	Existing Loan: Mr. Wallace	Existing Loan: Re-Calculated	Applied-for Loan
Loan Amount [1]	$234,453	$234,453	$230,000
Interest Rate [2]	3.87%	3.87%	2.75%
Monthly Principal and Interest Payment in CORE Data [3]	$6,712	$6,712	$939
Calculated Monthly Principal and Interest Payment [4]	$1,101.76	$7,291.70	$927
Loan Term [5]	360 Months	34 Months	360 Months
Full Loan Term Refinance Portion of Refinance Damages	$41,528	$27,543	

Source: Wallace Report and Supporting Materials; CORE Data

Note:
[1] The existing and applied-for loan amounts are from the CORE Data.
[2] The 3.87% existing loan interest rate is calculated by Mr. Wallace. For this calculation, Mr. Wallace adds his calculated average difference between the existing interest rate and applied-for interest rate for refinance applications during the Proposed Class Period to the applied-for interest rate. The 2.75% applied-for interest rate is calculated by Mr. Wallace using the applied-for loan amount, applied-for monthly principal and interest payment from the CORE Data, and the applied-for loan term.
[3] These monthly principal and interest payments are from the CORE Data.
[4] The monthly principal and interest payments for the existing loan are calculated based on the existing loan amount, existing interest rate, and the existing remaining loan terms. Mr. Wallace relies on his assumed loan term of 360 months, whereas I rely on the prior loan remaining term field from the CORE Data for this calculation (34 months). Mr. Wallace calculates the monthly principal and interest payment for the applied-for loan based on the Refinance Portion of Refinance damages, the applied-for interest rate, and the applied-for loan term.
[5] Because the prior loan interest rate from the CORE Data is NA for this ULI, (KB1H1DSPRFMYMCUFXT09PHT66360454754383977SBX69) Mr. Wallace assumes the existing remaining loan term to be equal to the applied-for loan term (360 months).

91. Using his assumed existing loan term of 360 months, Mr. Wallace calculates Refinance Portion of Refinance Damages at full loan term for this applicant as $41,528. Using the actual existing loan term as available in the CORE Data of 34 months, the Refinance Portion of Refinance Damages would decrease by over 33% to $27,543. Because of the error in Mr. Wallace's imputed existing loan term values, Mr. Wallace's damages methodology overstates the Refinance Portion of Refinance Damages for nearly all applications.[118]

[117] $41,528 – $27,543 = $13,985. $13,985 / $41,528 = 33.7%.
[118] *See* Figure 9.

92. A second way in which Mr. Wallace's Refinance Portion of Refinance Damages calculations overstate any harm to Proposed Class Members relates to his erroneous application of a discount rate to future interest savings. According to Schedule 2.1 of his report, Mr. Wallace uses the interest rate at the time of application (4.625% as of December 2021 in the hypothetical example) to discount future but-for savings until January 2024.[119] But such an interest rate understates the risk of future cash flows as of January 2024. Indeed, a rate of 4.625% barely exceeds the risk-free 30-year Treasury bond rate of 4.22% as of January 31, 2024.[120] A more appropriate discount rate as of January 2024 that would reflect the risks of future cash flows is Mr. Wallace's purported "prevailing rate" as of January 2024 (7.378%). If Mr. Wallace had used this rate instead, his Refinance Portion of Refinance Damages calculations would be lower by 13.8%.[121]

2. Cash-out Portion of Refinance Damages

93. Mr. Wallace's Cash-out Portion of Refinance Damages is flawed for many reasons. First, Mr. Wallace's bond valuation theory of Cash-out Portion of Refinance Damages is not relevant for residential mortgage borrowers. Second, Mr. Wallace's Cash-out Portion of Refinance Damages calculations do not match his bond valuation theory of damages and, in any case, do not reliably measure harm to Proposed Class Members. Third, Mr. Wallace's Cash-out Portion of Refinance Damages methodology depends on individual choices that his damages model cannot accommodate. Finally, even relative to his flawed theory of harm for Cash-out Portion of Refinance Damages, Mr. Wallace's damages calculations would overstate any harm.

a) Mr. Wallace's Bond Valuation Theory of Cash-out Portion of Refinance Damages Is Not Relevant for Residential Mortgage Borrowers

94. According to Mr. Wallace, his methodology for the Cash-out Portion of Refinance Damages is based on "the lost financial gain associated with the value of a fixed low-rate interest

[119] Wallace Report and Supporting Materials, Schedule 2.1
[120] "Market Yield on U.S. Treasury Securities at 30-Year Constant Maturity, Quoted on an Investment Basis (DGS30)," *Federal Reserve Economic Data*, https://fred.stlouisfed.org/series/DGS30.
[121] *See* Workpaper 9.

obligation during a time of rising interest rates."[122] Mr. Wallace describes his calculation method as follows:

> Damages for the lost financial gain associated with the cash-out portion of an improperly denied refinance loan can be measured in a similar way that one measures changes in value of fixed-interest rate bonds due to changing interest rates, by comparing the present value of the principal+interest payment stream of the cash-out portion of the denied refinance loan at the denied refinance rate to the present value of the principal+interest payment stream at the now higher prevailing market interest rates.[123]

95. Mr. Wallace appears to describe the concept in fixed income valuation wherein fixed-coupon bond prices are inversely correlated with interest rates: as interest rates rise, the price of a bond falls and vice-versa.[124]

96. The decline in price due to rising interest rates is a *potential* benefit to a debt issuer. In certain circumstances, the debt issuer can mark-to-market the (now lower) value of its debt and report higher equity.[125] However, this would be an on-paper gain and not a realized profit because the debt issuer would need to actually purchase back its debt at the lower value in order to realize the gain.[126] If a secondary market exists, the debt issuer may repurchase its debt for less than the amount it raised and create an actual profit on the transaction. Notably, the debt issuer would not realize any benefit of interest rate movements if it held the debt for the full term.[127]

97. Mr. Wallace appears to assert that by not obtaining a low-interest loan before rates rose, homeowners were harmed because they did not enjoy the benefit described above.[128] However, Mr. Wallace's damages theory is a misapplication of bond valuation theory to residential mortgages.

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[122] Wallace Report, ¶ 11.
[123] Wallace Report, ¶ 11.
[124] Wallace Report, ¶ 11; Jonathan Berk and Peter DeMarzo, *Corporate Finance*, Third Edition (Boston, MA: Person, 2014), pp. 175–181.
[125] *See*, *e.g.*, John C. Heaton et al., "Is Mark-to-Market Accounting Destabilizing? Analysis and Implications for Policy," *Journal of Monetary Economics* 57, no. 1, 2010, pp. 64–75 at p. 68; Sung Gon Chung et al., "Valuation Implications of FAS 159 Reported Gains and Losses From Fair Value Accounting for Liabilities," *Journal of Accounting, Auditing & Finance* 38, no. 4, 2023, pp. 833–856 ("Chung et al. (2023)") at pp. 833–834, 837.
[126] Chung et al. (2023), p. 838.
[127] Chung et al. (2023), p. 838.
[128] Wallace Report, ¶ 6.

98. The benefit of rising interest rates to low-interest debtors does not accrue to homeowners in the way Mr. Wallace's damages calculations imply. First, as noted above, debtors can only realize a risk-free cash profit from rising rates if they buy back their now discounted debt.[129] In the case of mortgage debt, buying back the debt would amount to prepaying the outstanding principal balance on the mortgage at market prices rather than book value. Most homeowners obtain cash loans and mortgages because they do not have sufficient cash reserves for a home or other large expenditure and hence rarely would have sufficient cash reserves to prepay the outstanding principal balance on their mortgage.[130] Second, even if homeowners have sufficient cash to pay off their loans, there is no obvious mechanism that would enable a homeowner to retire their debt by paying less than their unpaid principal balance. Lenders do not discount a borrower's unpaid principal balance when interest rates rise. Nor is there, generally, a market for whole mortgages where borrowers can repurchase their own debt. Most home loans are sold to GSEs and securitized.[131] Indeed, Mr. Wallace has not articulated how, if at all, homeowners may realize a financial benefit purely from having a fixed cash loan when interest rates rise.

99. To the contrary, a fixed-rate loan is not inherently a benefit. Like all debt, cash loans and mortgages create an ongoing *expense*.[132] A loan is only a financial benefit if the borrowed funds are used to create more value than the (discounted) value of the total interest expense. Accordingly, whether a person is damaged by not receiving a mortgage, a cash-out loan, or a HELOC depends on what that person does with the proceeds. For example, a person who borrows at a low fixed rate in order to make a losing investment will not benefit from having obtained the loan. Rather, the person would have been better off economically if they had not obtained the loan that enabled the investment in the first place.

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[129] Chung et al. (2023), p. 838.

[130] Erika Giovanetti, "Mortgage Alternatives: Buying a House without a Mortgage," *U.S. News*, January 25, 2024, https://money.usnews.com/loans/mortgages/articles/mortgage-alternatives-buying-a-house-without-a-mortgage ("Most people simply don't have enough cash on hand to buy a home outright.").

[131] James Royal, "Secondary Mortgage Market: What It Is and How It Works," *Bankrate*, January 31, 2024 https://www.bankrate.com/mortgages/secondary-mortgage-market/ ("After originating a loan, a lender often sells it in the secondary mortgage market, though the lender may retain the servicing rights. Many lenders sell loans to the government-sponsored enterprises (GSEs) Fannie Mae and Freddie Mac or to other aggregators.").

[132] *See* Section VII.B.

b) Mr. Wallace's Cash-out Portion of Refinance Damages Calculations Do Not Match His Theory of Damages and Do Not Reliably Measure Harm to Denied Applicants

100. While Mr. Wallace's proposed damages theory is untethered to the realities of the mortgage market, his damages calculations are untethered even to his flawed theory. Although Mr. Wallace purports to calculate damages in "a similar way that one measures changes in value of fixed-interest rate bonds due to changing interest rates," his calculation examples reveal he does no such thing.[133]

101. Mr. Wallace's damages calculations erroneously apply changing interest rates to the payment amount rather than to the value of the mortgage despite that the monthly payment amount for a fixed-rate mortgage is, by definition, fixed.[134] Accordingly, his damages calculations do not represent the "the lost financial gain associated with the value of a fixed low-rate interest obligation during a time of rising interest rates."[135] Because of this error, Mr. Wallace's calculations do not resemble any but-for world that would be consistent with Plaintiffs' allegations.

102. Under a generous interpretation of Mr. Wallace's inconsistent calculation methodology, it may be that Mr. Wallace attempts to measure the value Proposed Class Members could have received if they had been approved for fixed-rate loans and, expecting that interest rates would rise, used those borrowed funds to make floating-rate loans, thereby profiting from an increase in prevailing rates. But such an assertion is both impractical and contradicted by Proposed Class Members' revealed preferences.

103. For example, to achieve the floating rates Mr. Wallace asserts applicants could have earned, they would have needed to *make* an equivalent loan to another applicant (i.e., a collateralized personal loan with an equal term and that is eligible for prepayment).[136] Extending such a loan would require the Proposed Class Member to carry risk of default. Moreover, it would also be less profitable than Mr. Wallace's calculations imply. Mr. Wallace sets the interest levels of the proposed floating-rate loan equal to the average fixed- or adjustable-rate

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[133] Wallace Report, ¶ 11.
[134] Wallace Report and Supporting Materials, Schedule 2.4.
[135] Wallace Report, ¶ 11.
[136] Wallace Report and Supporting Materials, Schedule 2.4, Schedule 6, Schedule Class-REFI.

loan for Wells Fargo loans with corresponding terms in any given month.[137] But floating-rate loans typically have lower interest levels on average than fixed-rate loans because the borrower bears the interest rate risk and is compensated through lower rates.[138]

104. Asserting that all Proposed Class Members, or indeed any Proposed Class Member, would have undertaken such an investment scheme is speculative and contrary to the stated preferences of borrowers. Indeed, survey data show that borrowers use funds from cash-out loans in a variety of ways, and none of those expressly include to make an equivalent loan to another borrower. As shown in Figure 12 below, the primary reasons borrowers report for obtaining cash-out refinances include paying off other bills, home repairs or new construction, or closing costs for another mortgage. Business or investments comprise only a minority of responses.

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[137] *See*, *e.g.*, Wallace Report and Supporting Materials, Schedule 2.4.

[138] "What Is the Difference between a Fixed-Rate and Adjustable-Rate Mortgage (Arm) Loan?," *Consumer Financial Protection Bureau*, September 4, 2020, https://www.consumerfinance.gov/ask-cfpb/what-is-the-difference-between-a-fixed-rate-and-adjustable-rate-mortgage-arm-loan-en-100/; Chris Arnold, "Adjustable Rate Mortgages Can Be Cheaper but Risky. Here's What You Need to Know," *National Public Radio*, September 10, 2022, https://www.npr.org/2022/09/10/1121340423/home-prices-adjustable-rate-mortgages-risky.

Figure 12
Ways in Which Borrowers Used the Money from Their Cash-out Refinance[1]
2020[2]

Response	Black	Hispanic	Asian	Other	All Minorities[3]	White
Pay Off Other Bills or Debts	41%	46%	19%	43%	40%	45%
Home Repairs or New Construction	33%	41%	28%	38%	37%	38%
Savings	25%	20%	22%	22%	22%	19%
Closing Costs of New Mortgage	10%	17%	28%	37%	19%	26%
Did Not Get Money From Refinancing	22%	20%	18%	4%	19%	13%
Auto or Other Major Purchase	2%	14%	6%	3%	9%	10%
Business or Investment	9%	6%	18%	10%	9%	4%
College Expenses	3%	5%	3%	2%	4%	5%
Buy Out Co-Borrower e.g. Ex-Spouse	0%	2%	0%	2%	1%	2%

Source: National Survey of Mortgage Originations

Note:
[1] Respondents were asked "Did you use the money you got from this new mortgage for any of the following?" The table above includes all of the answers provided by the survey for the question. The table displays the percentage of respondents who marked "yes" for an answer in a given year. Respondents were allowed to mark "yes" for multiple answers. Respondents were asked to indicate their race with answer choices "White only," "Black or African American only," "Asian only," and "All other races." Respondents were also asked whether they were Hispanic or Latino. Respondents who identified as "White only" and did not identify as Hispanic or Latino are included in the White response category. All respondents who identified as "Black or African American only" are included the Black response category. Respondents who identified as "Asian only" and did not identify as Hispanic or Latino are included in the Asian response category. Respondents who identified as "All other races" and did not identify as Hispanic or Latino are included in the Other response category. Respondents who identified as "White only," "Asian only," or "All other races" and identified as Hispanic or Latino are included in the Hispanic response category.
[2] Respondents shown had loans originated in 2020.
[3] All Minorities includes Black or African American, Hispanic, Asian, and Other respondents.

c) Mr. Wallace's Cash-out Portion of Refinance Damages Depends on Individual Choices

105. Mr. Wallace's Cash-out Portion of Refinance Damages relies on an assumption that all Proposed Class Members would have used the proceeds of their fixed-rate cash-out loans to make equivalent floating-rate cash-out loans. While it is unreasonable to assume that all Proposed Class Members would have used their loans to make fixed-income investments, any damages would depend on what, precisely, Proposed Class Members would have done with cash-out funds if they had received them.

106. For example, as shown in Figure 12 above, one of the largest reported uses for cash-out funds is to pay off other bills or debts. Damages for Proposed Class Members who would have used cash-out loans to pay off bills depends on the interest rates accruing on loans they would

have paid off. Accordingly, determining damages for the Proposed Class would require obtaining this information.

107. Another primary reason for cash-out refinances is to fund home repair or construction projects. Damages to borrowers who were not able to obtain financing and therefore were forced to forego a home improvement project would depend on the value such a project would have created. According to industry estimates, the return on investment of home improvement projects varies substantially from one project to another and, importantly, most home improvement projects do not even recoup the expenditure they required.[139] In other words, at least some borrowers who would have used cash-out funds for a home improvement project, if not most, benefitted financially by not obtaining the loan.

108. Even if it were possible to determine the precise but-for behavior of Proposed Class Members had they been approved for cash-out refinance loans, Mr. Wallace's damages model is not sufficiently flexible to incorporate such information. The only flexibility afforded by Mr. Wallace's methodology are various cutoffs under which the trier-of-fact may assume the but-for loan would have ended. But his methodology does not allow for different assumptions as to what the denied applicants would have done with the proceeds of the loans other than invest those proceeds into floating-rate loans. Accordingly, Mr. Wallace's cash-out damages methodology cannot reliably estimate damages for Proposed Class Members in a way that reflects individual behaviors and preferences.

d) Even Relative to His Flawed Theory, Mr. Wallace Overstates Damages

109. Even assuming Mr. Wallace's deeply flawed methodology were an appropriate way to measure Proposed Class Member harm—which it is not—it would still overstate damages for multiple reasons.

110. First, under Mr. Wallace's flawed Cash-out Portion of Refinance Damages calculation methodology, any applicant who applied for, but was denied, an adjustable-rate loan should not be damaged at all. By revealed preference, such a person *did not* expect interest rates to rise, *did not* place a bet on rising interest rates by locking in a fixed-rate loan and, indeed, could not have

[139] Zonda, "2023 Cost vs. Value Report," March 15, 2023, https://zondahome.com/2023-cost-vs-value-report/; "National Data," *Remodeling Magazine*, 2023, https://www.remodeling.hw.net/cost-vs-value/2023/.

made a floating-for-fixed interest rate investment. And yet Mr. Wallace ignores that a portion of Proposed Class Members applied not for a fixed-rate loan, as he assumes all applicants did, but rather an adjustable-rate loan. Indeed, 3.6% of the Proposed Refinance Subclass applied for an adjustable-rate loan, corresponding to between 11% and 15% of Mr. Wallace's total calculation of Refinance Damages. This is shown in Figure 13 below:

Figure 13
Refinance Damages for Adjustable-Rate Mortgage Applications

			Using Mr. Wallace's Methodology				
		Count	Year 3 Cutoff Damages	Year 5 Cutoff Damages	Year 7 Cutoff Damages	Year 9 Cutoff Damages	Full Term Damages
Refinance Damages for Adjustable-Rate Mortgage Applications[1]	[a]	2,785	$34,122,901	$57,195,169	$78,446,570	$96,282,562	$159,881,706
Total Refinance Damages	[b]	77,937	$234,104,654	$460,312,569	$671,351,205	$839,902,445	$1,292,002,027
Percent	[c] = [a] / [b]	3.6%	14.6%	12.4%	11.7%	11.5%	12.4%

Source: Wallace Report and Supporting Materials, Schedule CLASS-REFI; CORE Data

Note:
[1] Row includes Proposed Refinance Subclass Member applications for an adjustable-rate refinance mortgage. This was done by filtering to the Proposed Refinance Subclass Member applications with CORE_AMORT_TYPE_CD = "A".

111. Second, Mr. Wallace's damages calculation is inflated because he asserts as "cash out" borrowed funds for which there is no evidence that applicants actually received cash. Mr. Wallace does not limit his calculation of cash-out damages to only applicants of cash-out refinance loans. Rather, he includes all refinance applicants (whether cash-out, refinance only, or home improvement/other) who, according to him, would have received even small amounts of cash in their refinance transaction.[140] This happens because Mr. Wallace assumes that if an applicant's applied-for loan was larger than their prior loan plus any fees that may be "rolled in" to the new loan, such applicants received cash.[141] However, this assumption is unfounded.

112. There are several reasons aside from fees that a new loan balance will exceed the mortgage that is being refinanced. The first relates to the timing of interest payments. The lender holding the prior loan requires a full payoff including both unpaid principal balance *and* any interest that has accrued since the last mortgage payment was recorded.[142] This interest

[140] Wallace Report, ¶¶ 61–62, 69, and Supporting Materials, Schedule CLASS-REFI.
[141] Wallace Report and Supporting Materials, Figure 13, Schedule 2.5.
[142] "Loan-to-Value and Combined Loan-to-Value Mortgage Amount Calculation Comparison," *U.S. Department of Housing and Urban Development*, https://www.hud.gov/sites/documents/08-40MLATCH.PDF.

accrual will typically be rolled in to the new loan even though it is not a separate fee charged by the new lender.[143]

113. The second relates to escrow accounts. Because interest and property tax payments are required semiannually rather than monthly, borrowers often choose to have lenders collect a pro-rated monthly amount for these payments and impound those amounts into escrow accounts from which the lender will make payments on behalf of borrowers.[144] However, when a loan is refinanced, the escrow account may not simply be transferred to the new loan but, instead, paid back to the homeowner.[145] To ensure there are sufficient funds in the escrow account attached to the new loan to make upcoming tax and insurance payments, the new loan can be increased for a catch-up contribution that will be placed in escrow.[146] This too is not a fee charged by the lender, but just a reconciliation between the old and new loan.

114. By including small amounts that are more likely related to accrued interest and escrow changes, Mr. Wallace overstates damages. Indeed, as shown in Figure 14 below, approximately 14% of Mr. Wallace's Cash-out Portion of Refinance Damages are attributed to refinance-only applicants. This further accounts for 6% of all refinance damages:[147]

[143] "Loan-to-Value and Combined Loan-to-Value Mortgage Amount Calculation Comparison," *U.S. Department of Housing and Urban Development*, https://www.hud.gov/sites/documents/08-40MLATCH.PDF.
[144] "What Is an Escrow or Impound Account?," *Consumer Financial Protection Bureau*, September 4, 2020, https://www.consumerfinance.gov/ask-cfpb/what-is-an-escrow-or-impound-account-en-140/ ("The money that goes into the account comes from a portion of your monthly mortgage payment. An escrow account helps you pay these expenses because you send money through your lender or servicer, every month, instead of having to pay a big bill once or twice a year.").
[145] Sarah Sharkey, "Escrow Refund: What Is It and When Does It Occur?," *Rocket Mortgage*, February 27, 2023, https://www.rocketmortgage.com/learn/escrow-refund; "Mortgage Escrow Account: What You Need to Know," *New York State Department of Financial Services*, https://www.dfs.ny.gov/consumers/help_for_homeowners/mortgage_escrow_accounts.
[146] "Mortgage Escrow Account: What You Need to Know," *New York State Department of Financial Services*, https://www.dfs.ny.gov/consumers/help_for_homeowners/mortgage_escrow_accounts.
[147] Workpaper 10.

Figure 14
Cash-out Portion of Refinance Damages for Proposed Refinance Subclass Member Applications with Refinance as Loan Purpose

		Using Mr. Wallace's Methodology					
		Count	Year 3 Cutoff Damages	Year 5 Cutoff Damages	Year 7 Cutoff Damages	Year 9 Cutoff Damages	Full Term Damages
Proposed Refinance Subclass Member Applications with Refinance as Loan Purpose[1]	[a]	46,337	$8,600,644	$23,380,262	$36,382,741	$46,729,573	$77,170,267
Proposed Refinance Subclass Member Applications[2]	[b]	77,937	$73,199,146	$170,980,814	$259,737,060	$330,619,664	$545,163,828
Percent	[c] = [a] / [b]	59.5%	11.7%	13.7%	14.0%	14.1%	14.2%

Source: Wallace Report and Supporting Materials, Schedule CLASS-HP

Note:
[1] Row includes Proposed Refinance Subclass Member applications where Loan_Purpose equals “31 - Refinancing”.
[2] Row includes Proposed Refinance Subclass Member applications where Loan_Purpose equals either “31 – Refinancing”, “32 – Cash-out refinancing”, “2 – Home improvement”, or “4 – Other purpose”.

115. Given the foregoing, it is my opinion that Mr. Wallace’s damages methodology does not reliably estimate harm to any of the Proposed Refinance Subclass.

B. Home Purchase Damages

116. For the Proposed Home Purchase Subclass, Mr. Wallace calculates damages for “class members who applied for a home purchase loan and were improperly denied by Wells Fargo.”[148] He calculates two forms of such damages: (i) Home Appreciation Damages, and (ii) Home Purchase Financing Portion Damages.[149] I discuss each below.

[148] Wallace Report, ¶ 14.
[149] As a threshold matter, however, Plaintiffs’ definition of the Proposed Home Purchase Subclass is flawed. Plaintiffs’ experts both define the Proposed Home Purchase Subclass without taking into account the lien status of the applied-for loan. Thus, Mr. Wallace calculates damages for 276 applications that were for a second lien on a home, rather than a home purchase. This results in an inaccurate calculation of approximately $5.7 million in Home Appreciation Damages and Home Purchase Financing Portion Damages for second lien applicants. *See* Workpaper 11. Dr. Kurzendoerfer and Mr. Wallace apply the following filters in the HMDA Data to define the Proposed Home Purchase Subclass: loan_purpose=1 and open_end_line_of_credit=2. Plaintiffs’ experts should additionally have filtered to lien_status=1, to avoid including second liens.

1. Home Appreciation Damages

a) Mr. Wallace's Home Appreciation Damages Overstate Damages for All Proposed Class Members

117. Mr. Wallace calculates Home Appreciation Damages for first-time homebuyers under the theory that such applicants missed the "financial gain associated with [] residential home price appreciation during a time of rising home values" by having been denied by Wells Fargo.[150] According to Mr. Wallace, such damages can be calculated "based on the change in residential real estate values during the relevant period (home purchase date to the present) according to the Case-Shiller Home Price Index ('CSHPI')."[151] He calculates damages for cutoffs of one year, three years, five years, and the full loan term, and includes home price appreciation until November 2023.[152]

118. Mr. Wallace overstates his claims for Home Appreciation Damages by ignoring the significant costs associated with buying, owning, and selling a home, which include at least the following:

a. Interest expense. To the extent that a homeowner borrows money to purchase a home (as all members of Proposed Home Purchase Subclass aimed to do), they would have incurred interest expense in connection with owning the home.[153] Each of the loans at issue were amortizing loans, meaning that monthly payments comprised both principal and interest amounts.[154] In the early years of an amortizing

[150] Wallace Report, ¶ 15.
[151] Wallace Report, ¶ 15.
[152] Wallace Report and Supporting Materials, Schedule 3B, Schedule 3B.1, Schedule Class-HP.2.
[153] "How Does Paying Down a Mortgage Work?," *Consumer Financial Protection Bureau*, September 9, 2020, https://www.consumerfinance.gov/ask-cfpb/how-does-paying-down-a-mortgage-work-en-1943/ ("Each month, part of your monthly payment will go toward paying off that principal, or mortgage balance, and part will go toward interest on the loan."); Wallace Report and Supporting Materials, Schedule 3A.2.
[154] "How Does Paying Down a Mortgage Work?," *Consumer Financial Protection Bureau*, September 9, 2020, https://www.consumerfinance.gov/ask-cfpb/how-does-paying-down-a-mortgage-work-en-1943/ ("Each month, part of your monthly payment will go toward paying off that principal, or mortgage balance, and part will go toward interest on the loan.").

loan, when the remaining loan balance is high, most of the total payments go toward interest.[155]

b. Buyer closing costs. To purchase a home, buyers must often pay various closing costs such as lender fees, title fees, appraisal fees, home inspection fees, mortgage insurance premiums, prepaid expenses, and more.[156] Buyer closing costs often amount to between 3% and 6% of the loan amount.[157]

c. Selling fees. To create a cash profit from home price appreciation, a homeowner must sell their home. Selling homes generally involves selling costs, typically in the form of paying a real estate agent.[158] The standard list cost is about 5%–6% of the sales price of the home[159] and the national average cost in 2023 was 5.49%.[160]

d. Opportunity cost of a down payment. Conventional conforming home purchase loans, which make up the bulk of at-issue home purchase loans, typically require a down payment equal to at least 20% of the purchase price unless the applicant is willing to pay for monthly mortgage insurance.[161] Investing this money into a home means that a borrower must forego the opportunity to invest or otherwise use that capital in other ways. For example, if the homeowner would have otherwise used the down payment to generate a risk-free return in a savings account or to start a

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[155] "How Does Paying Down a Mortgage Work?," *Consumer Financial Protection Bureau*, September 9, 2020, https://www.consumerfinance.gov/ask-cfpb/how-does-paying-down-a-mortgage-work-en-1943/ ("In the beginning, you owe more interest, because your loan balance is still high. So most of your monthly payment goes to pay the interest, and a little bit goes to paying off the principal. Over time, as you pay down the principal, you owe less interest each month, because your loan balance is lower. So, more of your monthly payment goes to paying down the principal. Near the end of the loan, you owe much less interest, and most of your payment goes to pay off the last of the principal.").

[156] Ana Staples, "Closing Costs on a House Can Get Expensive. Here's How Much They Are and What They Include," *CNBC*, November 16, 2023, https://www.cnbc.com/select/closing-costs/.

[157] Ana Staples, "Closing Costs on a House Can Get Expensive. Here's How Much They Are and What They Include," *CNBC*, November 16, 2023, https://www.cnbc.com/select/closing-costs/.

[158] "How Much Does It Cost to Sell a House?," *Opendoor*, March 9, 2020, https://www.opendoor.com/articles/how-much-does-it-cost-to-sell-a-house ("[S]ellers pay 5% to 6% of the sale price as commission fees.").

[159] "How Much Does It Cost to Sell a House?," *Opendoor*, March 9, 2020, https://www.opendoor.com/articles/how-much-does-it-cost-to-sell-a-house ("While the average real estate agent commission hovers around 5% to 6%, depending on where you live, the total cost of selling tends to be higher."); "The Cost of Buying and Selling Homes Is Too High," *The Economist*, February 13, 2020, https://www.economist.com/leaders/2020/02/13/the-cost-of-buying-and-selling-homes-is-too-high.

[160] Taylor Freitas and Kellye Guinan, "How Do Real Estate Agent Fees and Commissions Work?," *Bankrate*, January 22, 2024, https://www.bankrate.com/real-estate/realtor-fees/ ("[T]he national average Realtor commission in 2023 was 5.49 percent.").

[161] "Conventional Loans," *Consumer Financial Protection Bureau*, https://www.consumerfinance.gov/owning-a-home/loan-options/conventional-loans/ ("If your down payment is less than 20%, you'll typically need mortgage insurance.").

successful business, income from these alternative investments would be costs associated with owning a home.

e. Maintenance costs. Homeowners generally incur maintenance and repair costs to ensure the property remains safely habitable and functional.[162] These are costs that are typically unique to property owners because renters are generally not responsible for property upkeep.[163] Thus, these are costs that first-time homebuyers would not incur if they did not purchase a home.

f. Property taxes. Homeowners are required to pay property tax each year to the state and municipality in which their home is located for as long as they own the property.[164]

g. Mortgage insurance. In some circumstances, especially where a borrower has less than 20% equity in the property, mortgage lenders require that the borrower obtain private mortgage insurance, which requires the payment of monthly premiums that are typically added to principal and interest payments.[165]

h. Non-financial costs (price risk). In addition to the financial costs of buying, owning, and selling a home, there are also non-financial costs, including the risk associated with making a levered investment in an asset whose price can rise or fall with market fluctuations. Even while housing has yielded a net positive return on investment for homeowners over long time horizons, it is not the case that all homeowners make money in all locations and over any window of ownership.[166]

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[162] "Maintaining Your Home," *Freddie Mac*, https://myhome.freddiemac.com/owning/home-maintenance ("As a homeowner, caring for and maintaining your home is an important responsibility. Regular upkeep can prevent costly problems from arising, make mechanical systems last longer and have a positive impact on your home's value. Maintenance will cost you time and money, but it can protect your home's value and ensure the comfort and safety of your family.").

[163] "Is a Landlord or Tenant Responsible for Repairs," *Apartments.com*, December 28, 2023, https://www.apartments.com/rental-manager/resources/maintenance/landlord-or-tenant-responsible-repairs ("In general, landlords are responsible for anything that breaks due to age, normal wear and tear, or that presents a safety issue.").

[164] Illyce Glink and Samuel J. Tamkin, "Paying off Your Mortgage? The Property Taxes and Homeowners Insurance Are Now on You," *The Washington Post*, March 3, 2021, https://www.washingtonpost.com/business/2021/03/03/paying-off-your-mortgage-property-taxes-homeowners-insurance-are-now-you/.

[165] "What is Mortgage Insurance and How Does it Work?," *Consumer Financial Protection Bureau*, September 9, 2020, https://www.consumerfinance.gov/ask-cfpb/what-is-mortgage-insurance-and-how-does-it-work-en-1953/ ("Typically, borrowers making a down payment of less than 20 percent of the purchase price of the home will need to pay for mortgage insurance. Mortgage insurance also is typically required on FHA and USDA loans.").

[166] Goodman and Mayer (2018), Table 5, p. 50.

119. Mr. Wallace's failure to consider the significant costs of buying, owning, and selling a home results in his Home Appreciation Damages being substantially overstated, as I illustrate further below.

120. Mr. Wallace also does not account for the risk of homebuying or the potential costs of losing a home. Mr. Wallace purports to offer a method whereby the trier-of-fact may adjust his damages for "facts or assumptions about the length of time a class member would have held on to the home purchase loan had it not been improperly denied by Wells Fargo."[167] But Mr. Wallace does not provide any damages methodology that can account for the manner by which a Proposed Class Member would have terminated their loan or any damages calculations that assume anything other than repayments complying with the mortgage terms. In so doing, Mr. Wallace ignores the likelihood that at least some Proposed Class Members would have defaulted and faced foreclosure on their mortgages if approved by Wells Fargo.

121. The rate of consumer mortgage delinquency rose significantly during the COVID-19 recession of 2020, which occurred roughly halfway through the Proposed Class Period.[168] The Urban Institute estimated that due to COVID-19, delinquencies on new mortgage originations had "recently jumped dramatically."[169] During this time, the unemployment rate also spiked.[170] To the extent that any Proposed Class Member would have been unable to remain current on their but-for loan because of unemployment and would have faced foreclosure, such Proposed Class Members may have incurred a net economic cost rather than a benefit of homeownership. For example, the Department of Housing and Urban Development estimated in a 2010 study that the average financial cost to a homeowner due to a foreclosure was $10,300.[171] However, this

[167] Wallace Report, ¶ 87.

[168] "Large Bank Consumer Mortgage Balances: 90 or More Days past Due: Including Foreclosures Rates: Balances Based," *Federal Reserve Economic Data*, https://fred.stlouisfed.org/series/RCMFLBBALDPDPCT90P.

[169] Urban Institute, Housing Finance Policy Center, "Housing Finance at a Glance – A Monthly Chartbook," February 2021, https://www.urban.org/sites/default/files/publication/103746/housing-finance-at-a-glance-a-monthly-chartbook-february-2021_0.pdf ("2009 and later originations have pristine credit characteristics and a more favorable home price environment, contributing to very low default rates. Even so, due to COVID-19, delinquencies on new origination, while still low, have recently jumped dramatically.").

[170] "Unemployment Rate," *Federal Reserve Economic Data*, https://fred.stlouisfed.org/series/UNRATE.

[171] U.S. Department of Housing and Urban Development, "Economic Impact Analysis of the FHA Refinance Program for Borrowers in Negative Equity Positions," https://www.hud.gov/sites/documents/IA-REFINANCENEGATIVEEQUITY.PDF, p. 9.

likely underestimates the true cost of a foreclosure to a homeowner because it does not incorporate the "higher cost of housing in the future due to a poor credit rating."[172]

122. And yet Mr. Wallace's damages calculation does not contemplate any possible foreclosures among Proposed Class Members. Nor can the damages methodology he offers be adjusted for any such foreclosures.

b) Home Appreciation Damages Depend on Individual Applicant Choices

123. Importantly, many of the determinants of Home Appreciation Damages noted above would depend on individual choices and circumstances that are not known and, even if they were known, could not be accounted for using Mr. Wallace's damages framework. For example, even while Mr. Wallace purports to offer flexibility in the form of various cutoffs relating to when applicants would pay off their hypothetical mortgages, he has not offered any method for determining what cutoffs should apply to each Proposed Class Member. Moreover, he has also not offered a method for determining any of (i) a borrower's existing rent, (ii) the use or investment of a borrower's down payment funds, (iii) a borrower's selling fees, (iv) the extent of a borrower's home maintenance and associated expenses, or (v) a borrower's property taxes. Even if these were knowable, Mr. Wallace has not offered a way to adapt his methodology to incorporate them—there is no "cutoff" mechanism that would allow the trier-of-fact to adjust damages for any of these conditions.

2. Home Purchase Financing Portion Damages

124. Mr. Wallace calculates Home Purchase Financing Portion Damages using the same methodology he followed for calculating the Cash-out Portion of Refinance Damages.[173] Specifically, while claiming to base his calculation on a revaluation of a fixed-rate loan at the prevailing rate, he actually calculates damages under an apparent assumption that denied applicants missed the opportunity to invest borrowed funds into floating-rate loans. Each of the

[172] U.S. Department of Housing and Urban Development, "Economic Impact Analysis of the FHA Refinance Program for Borrowers in Negative Equity Positions," https://www.hud.gov/sites/documents/IA-REFINANCENEGATIVEEQUITY.PDF, p. 9.
[173] Wallace Report, ¶ 14.

criticisms I laid out in Section X.A.2 above applies equally to Mr. Wallace's calculation of Home Purchase Financing Portion Damages. Additionally, implicit in Mr. Wallace's damages theory is that Proposed Home Purchase Subclass Members failed to both obtain a home and to profit from a low fixed-rate loan (e.g., by not being able to make a floating-rate investment) because they were denied. However, these two sources of harm are alternatives—one cannot both use a mortgage to purchase a home and also make a floating-rate investment with it. And indeed, home purchase applicants revealed their preferences to use mortgages to own homes, not to make floating-rate investments.

125. While Mr. Wallace's calculation of this form of damages in the context of a cash-out loan is deeply flawed, such a calculation in the context of a home purchase loan is nonsensical. As laid out above, using Mr. Wallace's damages methodology, a borrower can only profit by the difference in a fixed- and floating-rate loan if the borrower takes the proceeds of the fixed-rate loan and invests them into a floating-rate loan.[174] While this may be theoretically possible (although highly improbable) for a cash-out loan, it is not possible for a home purchase loan. For a home purchase loan, the proceeds of a mortgage go to the seller of the home and are not available to the borrower to make floating-rate mortgage loans. Accordingly, none of the Home Purchase Financing Portion Damages Mr. Wallace calculates are reasonably related to any harm to Proposed Class Members.

126. Moreover, as with his Cash-out Portion of Refinance Damages calculation, Mr. Wallace completely ignores that some Proposed Class Members applied for adjustable-rate mortgages. Under Mr. Wallace's theory of financing damages, these applicants would not have benefited from historically low rates if approved and therefore are not damaged. Indeed, 7.9% of the Proposed Home Purchase Subclass applied for an adjustable-rate mortgage, corresponding to between 23% and 34% of Mr. Wallace's total home purchase financing calculations:

[174] *See* Section X.A.2.

Figure 15
Home Purchase Financing Portion Damages for Adjustable-Rate Mortgage Applications

			Using Mr. Wallace's Methodology				
		Count	3 Year Cutoff Damages	5 Year Cutoff Damages	7 Year Cutoff Damages	9 Year Cutoff Damages	Full Term Damages
Home Purchase Financing Portion Damages for Adjustable-Rate Mortgage Applications[1]	[a]	1,840	$80,398,975	$168,115,998	$247,332,471	$312,675,398	$538,511,168
Total Home Purchase Financing Portion Damages	[b]	23,286	$239,680,394	$618,075,188	$972,727,433	$1,264,488,700	$2,262,698,290
Percent	[c] = [a] / [b]	7.9%	33.5%	27.2%	25.4%	24.7%	23.8%

Source: Wallace Report and Supporting Materials, Schedule CLASS-HP; CORE Data

Note:
[1] Row includes Proposed Home Purchase Subclass Member applications for an adjustable-rate mortgage. This was done by filtering to the Proposed Home Purchase Subclass Member applications with CORE_AMORT_TYPE_CD = "A".

3. Illustration of the Flaws in Mr. Wallace's Home Purchase Financing Portion Damages Methodology and Calculations

127. The flaws in Mr. Wallace's Home Purchase Financing Portion Damages methodology can be illustrated using Mr. Wallace's hypothetical home purchase loan applicant (Applicant #2).[175] For simplicity, I consider a three-year cutoff under which Mr. Wallace reports damages for Applicant #2 of $96,842, including $19,187 of Home Purchase Financing Portion Damages and $77,655 of Home Appreciation Damages.[176]

128. In Figure 16 below, I describe two typical scenarios for Applicant #2. In the first scenario, I assume that Applicant #2 received the but-for home purchase loan for which she was denied by Wells Fargo. In the second scenario, I assume that Applicant #2 did not receive the home purchase loan and instead rented an apartment for those three years.

[175] Wallace Report, ¶ 90.
[176] Wallace Report and Supporting Materials, Schedule 3A, Schedule 3B.

Figure 16
Illustration of Realistic Scenario for
Mr. Wallace's Hypothetical Applicant #2

	But-for Denied Loan	Actual World
Upfront Cash Flows		
Mortgage Down Payment	-$80,000	N/A
Periodic Cash Flows Over Next Three Years		
Monthly Interest Income	N/A	$67
Monthly Housing Payments	-$1,482	-$1,482
Monthly Property Taxes and Maintenance	-$167	N/A
Cash Flows at Year Three		
Home Sale Proceeds	$477,655	N/A
Repayment of Remaining Mortgage Balance	-$301,666	N/A
Real Estate Agent Seller Fees	-$28,659	N/A

Source: Wallace Report and Supporting Materials, Schedule 3A.2

129. The cash flows in the but-for world differ from the actual world in three ways. First, the required up-front cash flows differ. In the first scenario, Applicant #2 identifies a home with a purchase price of $400,000 and offers to buy the home.[177] She applies for a home purchase loan for 80% of the purchase price ($320,000) and is required to contribute a 20% down payment of $80,000.[178] However, in the actual world where she continues to rent, this down payment is not needed. Thus, in the but-for world Applicant #2 pays $80,000 up front, while in the actual world she has no up-front payments.

130. Second, the periodic monthly cash flows made over the next three years differ. In the actual world, Applicant #2 was not required to pay an $80,000 down payment, and thus can earn investment income that is not possible in the but-for world. I conservatively assume that she places that $80,000 in a high-yield savings account that returns 1% interest per year. This generates monthly interest income of $67 on average over three years. I next assume that Applicant #2's monthly mortgage payment of $1,482 on her 30-year, 3.75% fixed mortgage in the but-for world exactly equals her rent payment in the actual world. Finally, in the but-for world, Applicant #2 must pay property taxes and maintenance on her home, which I

[177] Wallace Report, Figure 20.
[178] Wallace Report, Figure 18.

conservatively assume equals only 0.5% of the home value per year (i.e., $2,000 / $400,000), or $167 per month. She would not need to make these payments in the actual world.

131. Third, the cash flows at the end of three years differ. In the but-for world, Applicant #2 sells the house, after factoring in price appreciation, for $477,655.[179] I assume she sold the house using a real estate agent who charged 6% of the sale price of the home, or $28,659. Additionally, based on her monthly mortgage payments, Applicant #2 paid down the mortgage by $18,334, so the outstanding balance of the mortgage was $301,666.[180] Therefore, I assume that she used the proceeds of the sale to pay off the outstanding balance. In the actual world, since she was renting an apartment, there are no related cash flows at the end of three years.

132. In this hypothetical illustration, the economic benefits Applicant #2 would have realized if not for an allegedly improper denial can be calculated as in Figure 17.

Figure 17
Hypothetical Damages for Applicant #2

Home Sale Proceeds	$477,655
Remaining Principal Balance	-$301,666
Down Payment	-$80,000
Real Estate Agent Fees	-$28,659
Carrying Costs	-$6,000
Foregone Returns on Down Payment	-$2,424
Damages	**$58,906**

Source: Wallace Report and Supporting Materials, Schedule 3A.2, Schedule 3B.2

133. Figure 17 shows that the cash profits Applicant #2 failed to realize because of allegedly improper loan denial (i.e., damages) were $58,906, consisting only of home price appreciation.[181] She would not have made a profit from any "financing gains" because she used the proceeds of the mortgage to purchase the home. In this example, Mr. Wallace's calculation of damages to Applicant #2 of $96,842 overstates damages substantially by ignoring the cost of homeownership and by imagining financing damages for homeowners where there are none, as shown in Figure 18 below. Importantly, however, Mr. Wallace's damages methodology cannot

[179] Wallace Report and Supporting Materials, Schedule 3B.1.
[180] Wallace Report and Supporting Materials, Schedule 3A.2.
[181] This does not account for any discount factor adjustment.

simply be adjusted to account for these costs—rather, separate calculations that consider costs to homeownership would need to be performed for each Proposed Class Member.

Figure 18
Home Purchase Loan Damages
Wallace Methodology vs. Realistic Scenario

	Wallace Methodology	Based on Realistic Scenario
Home Appreciation Damages	$77,655	$58,906
Home Purchase Financing Portion Damages	$19,187	$0

Source: Wallace Report and Supporting Materials, Schedule 3A, Schedule 3A.2, Schedule 3B.1

134. Mr. Wallace's damages methodology also cannot be used to estimate harm for many common post-denial and but-for choices and outcomes that deviate from Mr. Wallace's simplistic Applicant #2 assumptions. In Figure 19 below, I summarize four such scenarios. Again, measuring damages in each of these scenarios requires a separate calculation that Mr. Wallace's methodology does not provide.

Figure 19
Home Purchase Loan Damages
Hypothetical Damages in Several Realistic Scenarios

			Alternative Realistic Scenarios			
	Wallace Methodology	**Corrected Baseline**	**Invest in S&P 500**	**Large Home Repair Expense**	**Foreclosure**	**Live with Parents**
But-for World Cash Flows						
Home Sale Proceeds	$477,655	$477,655	$477,655	$477,655	$400,000	$477,655
Home Purchase Amount	-$400,000					
Remaining Principal Balance		-$301,666	-$301,666	-$301,666	-$301,666	-$301,666
Down Payment		-$80,000	-$80,000	-$80,000	-$80,000	-$80,000
Mortgage Payments		-$53,351	-$53,351	-$53,351	-$53,351	-$53,351
Real Estate Agent Fees		-$28,659	-$28,659	-$29,557	$0	-$28,659
Carrying Costs		-$6,000	-$6,000	-$16,000	-$6,000	-$6,000
Foreclosure Costs		$0	$0	$0	-$10,300	$0
Actual World Cash Flows						
Rent Payments		-$53,351	-$53,351	-$53,351	-$53,351	$0
Investment Income		$2,424	$15,789	$2,424	$2,424	$2,424
Home Appreciation Damages	$77,655	$58,906	$45,541	$48,008	-$390	$5,555
Home Purchase Financing Portion Damages	$19,187	$0	$0	$0	$0	$0
Total Damages	**$96,842**	**$58,906**	**$45,541**	**$48,008**	**-$390**	**$5,555**

Source: Wallace Report and Supporting Materials, Schedule 3A, Schedule 3A.2, Schedule 3B.1; *Federal Reserve Economic Data*

135. The first column, labeled "Wallace Methodology," shows damages that Mr. Wallace calculates in his report for Applicant #2. The second column, labeled "Corrected Baseline," summarizes the but-for world and actual world cash flows for Applicant #2 after accounting for

the costs of owning and selling a home, leading to hypothetical damages of $58,906, as discussed above. The remaining columns adjust the Corrected Baseline for different realistic scenarios.

136. In the "Invest in S&P 500" column, I assume that in the actual world, rather than keeping the down payment amount in a high-yield savings account, Applicant #2 invests that money in the S&P 500. Between July 15, 2021 (i.e., the assumed denial date for Applicant #2) and March 15, 2024, the S&P 500 had a cumulative annual growth rate of 6.2%.[182] This results in incremental investment income of $15,789 over that three-year period. Due to this increase in investment income, damages decline to $45,541, or an over 50% decline from the damages amount Mr. Wallace calculates in his report.

137. In the "Large Home Repair Expense" column, I assume instead that Applicant #2 incurs a large home repair expense in the but-for world at an additional cost of $10,000 to return the home back to the same quality as before the incident requiring the repair, which is within the general price range for many large home repairs.[183] This additional cost in the but-for world decreases damages by $10,000 to $48,906 for Applicant #2.

138. In the "Foreclosure" column, I assume that Applicant #2 enters foreclosure after three years. In this scenario, the bank forecloses on the house and sells the property for below market value, as often occurs with a foreclosed property.[184] Thus, I assume that the property sells for $400,000, the original purchase price three years prior. Further, I assume that Applicant #2 pays no real estate agent fees and instead pays $10,300 in foreclosure costs.[185] Under these assumptions, she would be better off financially in the actual world than the but-for world, and would not be entitled to damages.

139. In the "Live with Parents" column, I assume that Applicant #2 in the actual world lives with her parents and does not need to pay rent. By saving money on the monthly housing payments, damages for Applicant #2 decrease to $5,555.

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[182] *See* Workpaper 12; "S&P 500," *Federal Reserve Economic Data*, https://fred.stlouisfed.org/series/SP500. Given that as of the filing of this report there are not S&P 500 returns for the full three years after the denial date for Applicant #2, I assume that the S&P 500 would return the same 6.2% annual growth rate over the entire three-year period.

[183] Caroline Gilbert, "The 15 Most Expensive Home Repairs and How to Prevent Them," *Angi*, September 17, 2021, https://www.angi.com/articles/most-expensive-home-repairs.htm.

[184] Tim Maxwell, "What Happens to Your Equity in Foreclosure," *Experian*, January 9, 2024, https://www.experian.com/blogs/ask-experian/do-you-lose-your-home-equity-in-foreclosure/.

[185] *See* Section X.B.1.a.

140. In addition to the key issues in his methodology described above, Mr. Wallace incorrectly assumes that certain home purchase applicants would benefit from introductory interest rates for the life of their loan. Specifically, Mr. Wallace's data indicate that 1,744 applicants (7.5% of the Proposed Home Purchase Subclass) applied for a loan with an introductory rate period.[186] However, Mr. Wallace calculates damages for these applicants assuming this introductory interest rate would have persisted throughout the life of their loans. This assumption is incorrect, as the rate would be expected to increase after the expiration of the introductory period.[187] Mr. Wallace calculates total damages across these applicants of $498.6 million assuming they hold to term.[188]

C. HELOC Damages

141. Mr. Wallace calculates HELOC damages using the same methodology he followed for calculating the Cash-out Portion of Refinance Damages.[189] As I laid out in Section X.A.2 above, Mr. Wallace's methodology for calculating such damages is unreliable. Mr. Wallace's damages theory based on fixed-rate bond valuation is inconsistent with the realities of the residential mortgage market.

142. As with his failure to account for the fact that applicants may apply to multiple lenders in the Proposed Home Purchase and Proposed Refinance Subclasses, Mr. Wallace makes the same omission for HELOCs. Survey data demonstrate that 50% of applicants apply to multiple lenders.[190] Furthermore, his calculation, which is not consistent with his theory, presumes that Proposed Class Members would have taken fixed-rate HELOC loans and made equivalent

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[186] Mr. Wallace's underlying data include a variable titled "Introduction_Rate_Period" which appears to be null or populated with a number of months. For these 1,744 loans, Mr. Wallace uses the given monthly principal and interest payment (CORE_MONTHLY_PI_AMT), loan amount (Loan_amount), and loan term (Loan_Term) from his data build to impute a single fixed rate for the loan. *See* Workpaper 13. These applications are all adjustable-rate mortgage applications and are included in the calculation shown in Figure 15.

[187] "Adjustable Rate Mortgages (ARM)," *U.S Department of Housing and Urban Development*, https://www.hud.gov/program_offices/housing/sfh/ins/203armt ("After the initial period, the interest rate will adjust annually."). *See also* "Consumer Handbook on Adjustable-Rate Mortgages," *Consumer Financial Protection Bureau*, June 2020, https://files.consumerfinance.gov/f/documents/cfpb_charm_booklet.pdf, p. 2.

[188] The damages amounts for Mr. Wallace's term assumptions are as follows: $74,037,507 (3-year damages), $155,137,138 (5-year damages), $228,640,281 (7-year damages), and $289,250,955 (9-year damages). *See* Workpaper 13.

[189] Wallace Report, ¶ 18.

[190] Nomis Solutions, "The Customer View: HELOC Buyer Behavior Trends Analysis," August 2019, https://f.hubspotusercontent00.net/hubfs/20109104/Content-Library/White-Papers/The-Customer-View-HELOC-Buyer-Behavior-Trend-Analysis.pdf.

floating-rate loans in order to profit from interest rate increases.[191] Such a presumption is inconsistent with research from *Experian* and *Bankrate* that suggests that HELOCs are typically used for other purposes such as home improvements, financial emergencies, or paying off credit card debt.[192] In fact, *Experian* lists investing as a "bad way" to use a HELOC, noting "HELOCs can free up cash to invest in stocks or rental properties, but returns on such investments aren't guaranteed, making them risky bets."[193] These articles suggest that borrowers use HELOC funds for myriad options, each of which will have different economic costs and benefits depending on individual borrower choices. As also discussed in Section X.A.2.c above, Mr. Wallace's damages framework is not sufficiently flexible to account for such individual borrower choices even assuming such choices were knowable.

143. In calculating HELOC damages, Mr. Wallace makes further unsupported assumptions that serve to inflate his damages calculations. For example, citing average national credit balances of 40%, Mr. Wallace assumes that *all* members of the Proposed HELOC Subclass *immediately* draw 40% of their available balances and *immediately* fix their HELOC rates into a 10-year term.[194] But the data Mr. Wallace cites do not say anything about the timing of borrower draw-down, and do not support the notion that all borrowers would immediately draw down 40% of their HELOC at origination and convert the advance amount into a fixed-rate loan.[195] Indeed, Mr. Wallace provides no support for (i) the speed at which HELOC borrowers draw from their loans, or (ii) the propensity of borrowers to lock in their rates and the speed with which they might do so. Damages would be less if Mr. Wallace assumed anything different about the timing of borrower draw-down. Moreover, damages for HELOCs would be *zero* if instead he assumed that no borrower locked in their rate.

144. In his calculation of damages for any given applicant, Mr. Wallace assumes that the applicant would have immediately converted the advance into a fixed-rate loan at their

[191] Wallace Report, ¶ 17.

[192] Karen Axelton, "Best and Worst Ways to Use a HELOC," *Experian*, August 20, 2021, https://www.experian.com/blogs/ask-experian/best-and-worst-ways-to-use-heloc/; Lena Borrelli and Troy Segal, "Best Uses for a Home Equity Line of Credit (HELOC)," *Bankrate*, November 6, 2023, https://www.bankrate.com/home-equity/best-uses-for-a-home-equity-line-of-credit-heloc/.

[193] Karen Axelton, "Best and Worst Ways to Use a HELOC," *Experian*, August 20, 2021, https://www.experian.com/blogs/ask-experian/best-and-worst-ways-to-use-heloc/.

[194] Wallace Report, ¶ 100, and Supporting Materials, Schedule 4, Schedule 4.2, Schedule 9.3.

[195] *See*, *e.g.*, Wallace Report, ¶ 50, citing "Home Equity Line of Credit (HELOC)," *Wells Fargo*, https://web.archive.org/web/20200502154528/https://www.wellsfargo.com/equity/line-of-credit-details/.

introductory margin rate as applied to the prime rate.[196] Mr. Wallace entirely ignores that 5.9% of the Proposed HELOC Subclass are assigned negative margins in the data.[197] Mr. Wallace's damages methodology nonsensically assumes that these applicants would have been able to convert this introductory margin into a fixed rate with no change to the margin amount. These 5.9% of applicants in the Proposed HELOC Subclass represent approximately 14% of seven-year, nine-year, or full loan term damages as calculated by Mr. Wallace.[198]

145. Moreover, Mr. Wallace's calculations appear to calculate each applicant's margin as applied to the prime rate based on the interest rate of their denied HELOC application. He does not factor in any higher interest rate the applicant may have needed to pay as a result of converting their adjustable-rate HELOC into a fixed-rate advance. *Bankrate* explains that compared to a traditional, adjustable-rate HELOC, fixed-rate HELOCs typically carry higher initial interest rates and more fees and penalties.[199] This is because, as noted above, lenders bear interest rate risk when they offer fixed-rate loans. Additionally, lenders may incorporate an annual fee or penalty fees for fixed-rate HELOCs.[200]

D. Restitution Damages

146. Mr. Wallace argues damages for a fourth subclass that he refers to as the "Restitution Class" ("Proposed Restitution Subclass").[201] He describes this class as:

> [T]his group includes class members who paid upfront, non-refundable fees when applying for a loan at Wells Fargo that was improperly denied. These individuals were economically harmed by paying upfront non-refundable fees that they would not have paid if they had known their loan applications would be improperly

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[196] Wallace Report, ¶¶ 98–99 ("[E]conomic damages for each borrower in this subclass are the lost financial gain associated with the value of a fixed low-rate interest obligation during a time of rising interest rates."). *See also* Schedule 4.
[197] Workpaper 14.
[198] For the same set of applications, three-year damages are -$3,018,188 and five-year damages are -$946,816. *See* Workpaper 14.
[199] Mia Taylor and Troy Segal, "How Does a Fixed-Rate HELOC Work," *Bankrate*, February 12, 2024, https://www.bankrate.com/home-equity/heloc-with-fixed-rate-option/.
[200] Victoria Araj, "Fixed-Rate HELOCs: The Hard-To-Find Hybrid-Rate Loan," *Rocket Mortgage*, January 16, 2024, https://www.rocketmortgage.com/learn/fixed-rate-heloc.
[201] Wallace Report, ¶ 19.

denied. As a result, damages for each class member include the return of all such fees.[202]

147. Mr. Wallace has not shown that any Proposed Class Member, including the two Named Plaintiffs he specifically discusses, meets the Proposed Restitution Subclass definition. Mr. Wallace states that the "CORE fee data appears to be inaccurate or incomplete,"[203] and thus relies on loan documents for Named Plaintiffs Ifeoma Ebo and Terah Kuykendall-Montoya to calculate their estimation of restitution damages. Below, I discuss errors in Mr. Wallace's analysis that demonstrate such damages are not owed to either Named Plaintiff.

1. Ifeoma Ebo

148. Mr. Wallace purports to find that Ms. Ebo "paid at least $695.00 in up-front, non-refundable fees for an appraisal ($676.85) and credit report ($18.15)."[204] But based on her loan files, Ms. Ebo does not fit Mr. Wallace's definition of the Proposed Class because Ms. Ebo was not denied by Wells Fargo. Instead, Ms. Ebo received a commitment letter from Wells Fargo on December 29, 2021, yet subsequently withdrew her application.[205] Indeed, Mr. Wallace does not assign any damages to Ms. Ebo. A Wells Fargo letter dated May 3, 2022, confirmed Ms. Ebo's withdrawal decision, stating "[a]s you requested, we've cancelled your loan application … [t]his loan is no longer active in our system."[206] Consistent with her withdrawal, Ms. Ebo's ULI is not found in any of Mr. Wallace's numerous schedules, presumably because she does not fit Plaintiffs' definition of the Proposed Class.[207]

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[202] Wallace Report, ¶ 19.
[203] Wallace Report, ¶ 110.
[204] Wallace Report, ¶ 112.
[205] Wells Fargo Commitment Letter, December 29, 2021, EBO0000263–70 at 63 ("Congratulations! We're happy to tell you that your loan application has been approved based on the terms and conditions included in this Commitment Letter…"); Wells Fargo Letter from Joseph Notik to Ifeoma Ebo, May 3, 2022, WF-00018680 ("As you requested, we've cancelled your loan application listed above. This loan is no longer active in our system."). *See also* HMDA Data; CORE Data.
[206] Wells Fargo Letter from Joseph Notik to Ifeoma Ebo, May 3, 2022, WF-00018680.
[207] Based on my search of the HMDA Data and CORE Data, Ms. Ebo's ULI is KB1H1DSPRFMYMCUFXT09XQC79358489090985774HVL82. *See* Figure 7.

2. Terah Kuykendall-Montoya

149. Mr. Wallace finds that Ms. Kuykendall-Montoya is owed $684.00 because she "paid at least $684.00 in up-front, non-refundable fees for an appraisal ($667.00) and credit report ($17.00)."[208] As a threshold matter, Mr. Wallace's own Schedule CLASS-REFI.1 indicates that Ms. Kuykendall-Montoya was ultimately approved for a refinance by Wells Fargo.[209] Moreover, Ms. Kuykendall-Montoya is assigned negative damages of -$3,274 by Mr. Wallace, suggesting she was not damaged at all. Therefore, Mr. Wallace's assertion that Ms. Kuykendall-Montoya is owed a refund in fees is incorrect and contradicted by his own analysis. Furthermore, the appraisal document that Mr. Wallace cites to in support of his analysis is dated July 12, 2012, well before the beginning of the Proposed Class Period.[210]

XI. Conclusion

150. For all of the reasons listed above, Mr. Wallace's calculations grossly overstate the harm for allegedly improperly denied Proposed Class Members. As a threshold flaw, most of the damages Mr. Wallace calculated are for unharmed Proposed Class Members, as demonstrated by Plaintiffs' own expert. Additionally, Mr. Wallace's damages calculation methodologies contain serious flaws across the Proposed Subclasses. Mr. Wallace makes multiple unsupported assumptions that together comprise the majority of his damages claims. Lastly, Mr. Wallace's damages model is not flexible enough to reliably calculate damages on a class-wide basis.

Executed this 22 of March, 2024.

Carlyn Irwin

Carlyn Irwin

[208] Wallace Report, ¶ 114.

[209] Based on my search of the HMDA Data and CORE Data, Ms. Kuykendall-Montoya's ULI is KB1H1DSPRFMYMCUFXT09RDM35564146297292991BNY74. *See* Figure 7. She is listed in row 56970 of Wallace Report and Supporting Materials, Schedule CLASS-REFI.1, with a footnote indicator explaining "Damages for this application are limited to months prior to a known subsequent loan origination at this address for a Class member." *See* Wallace Report and Supporting Materials, Schedule CLASS-REFI.1.

[210] Wallace Report, footnote 80, citing to Uniform Residential Appraisal Report, July 11, 2012, WF-00132353–75.

Appendix A

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ACADEMIC BACKGROUND

1992	**University of Southern California** *M.B.A., Accounting and Finance*	Los Angeles, California
1989	**University of California, Santa Barbara** *B.A., Organizational Psychology, Cum Laude*	Santa Barbara, California

RANGE OF EXPERIENCE

Almost thirty years of litigation consulting and expert witness experience, including analyzing economic, financial, causation, and accounting issues in context of damages claims, valuing businesses, class certification, and conducting financial forensic analysis in a wide variety of commercial disputes. Has experience in broad range of industries including real estate, medical devices, healthcare, technology, entertainment, consumer products, textiles, and financial and professional services. Has worked with clients and counsel throughout the litigation process during all phases of the litigation process. Examples of testimony and casework experience include:

- Financial Forensic Analysis—Reconstructing financial records, tracing transactions through corporate reporting systems, and reviewing financial records (including tax returns) to assess consistency and reliability as part of corporate investigation, complex civil and criminal litigation involving white collar matters, as well as allegations of fraudulent conveyances, breach of contract, money laundering, pyramid schemes, RICO, and fraud. Have provided expert testimony regarding solvency, financial misstatements, fraudulent/preferential transfers, indications of fraudulent transactions and schemes, and misappropriation of assets.
- Contract and Tort Claims—Analyzing loss causation and damages issues and performing business valuations in breach of contract and tort causes of action, including breach of fiduciary duty, alter ego, Lanham Act violations, false advertising, and unfair business competition. Has analyzed compensatory damages as well as claims for statutory and restitution or disgorgement damages.
- Intellectual Property Disputes—Addressing damages issues in patent, copyright, and trademark infringement as well as trade secret misappropriation disputes. Specific expertise in estimating lost profits, unjust enrichment, and reasonable royalty damages, including analysis of loss causation and apportionment issues, as well as the application of "Most Favored Licensee" clauses.
- Valuation Services – Providing opinions of value for businesses, intellectual property, and other intangible assets in the context of litigation, economic loss analyses, and partnership disputes.

PROFESSIONAL ACCREDITATIONS

- Certified Public Accountant (CPA), California, State Board of Accountancy, April 2001
- Certified in Financial Forensics (CFF), American Institute of Certified Public Accountants, July 2008 (inception of credential)
- Certified Fraud Examiner (CFE), Association of Certified Fraud Examiners, March 2011
- Accredited in Business Valuation (ABV), American Institute of Certified Public Accountants, August 2015
- Certified in Entity and Intangible Valuations (CEIV), American Institute of Certified Public Accountants, January 2018

PROFESSIONAL AND BUSINESS HISTORY

2002–Present **Cornerstone Research, Inc.** Los Angeles, California
Senior Advisor (2015-present)
Principal (2002-2015)

1994–2002 **PricewaterhouseCoopers** Los Angeles, California
Director (2000-2002)
Manager/Principal (1997-2000)
Senior Consultant (1994-1997)

1992–1994 **Mitchell Silberberg & Knupp** Los Angeles, California
Assistant Controller

1991–1992 **University of Southern California School of Business** Los Angeles, California
Professor's Assistant, Finance Department

TESTIMONY EXPERIENCE:

- Testified in deposition (February 2024) in a breach of contract matter filed in United States District Court, Southern District of New York. Reviewed and rebutted plaintiffs' experts' analysis of indicia of alter ego and corporate structure. (*Emigrant Bank, et al. v. SunTrust Bank, et al.*)
- Provided deposition testimony (January 2024) in an alleged trade secret, unfair competition, and patent infringement matter filed in the United States District Court, District of Delaware. Analyzed and rebutted plaintiff's damages expert's calculations of head start damages as well as the cost of corrective advertising and employee poaching. (*Quorvo, Inc. v. Akoustis Technologies, Inc., et al.*)
- Testified in deposition (January 2024) in an alleged discrimination matter involving REO properties held and maintained by two banks filed in the United States District Court for Maryland. Analyzed and rebutted plaintiff's damages expert's claims related to economic harm caused to Fair Housing Organizations by the relative condition of the properties in the form of "diversion of resources" and "frustration of mission." (*National Fair Housing Alliance, et al. v. Bank of America, N.A., et al.*)

TESTIMONY EXPERIENCE (CONTINUED)

- Provided deposition (August 2023) and trial (November 2023) testimony in a breach of contract and tortious interference matter filed in the Second Judicial District Court of the State of Nevada in and for the County of Washoe. Estimated damages in the form of direct and indirect costs associated with movement of employees including loss of productivity, recruiting, hiring, onboarding, and replacing key personnel that departed the company. (*Toptal, LLC v. Denis Grosz, et al)*
- Testified in deposition (June 2023) and trial (October 2023) in a trade secret misappropriation, unjust enrichment, breach of contract, and tortious interference matter filed in United States District Court for the Northern District of California. Analyzed and rebutted plaintiff's damages claims related to use of confidential information in Software as a Service (SaaS) industry. (*Echospan, Inc. v. Medallia, Inc.*)
- Provided deposition testimony (October 2023) in a matter alleging conspiracy to commit fraud, breach of fiduciary duty, aiding and abetting, etc. of a financial institution with respect to clients' banking activity filed in the United States District Court, Southern District of California. Opinions related to plaintiff's claim of economic damages against the bank in the form of stipulated judgments with the FTC and/or the flow of funds as a result of clients' allegedly fraudulent sales scheme. (*Thomas W. McNamara, et al. v. Wells Fargo & Company*)
- Testified in deposition (August 2023) in a breach of fiduciary duty matter. Analysis determined compensation subject to claw back under various scenarios. Testified in deposition (July 2023) in a related matter involving alleged violations of federal and local statutes and compliance with federal banking laws filed in the United States District Court for the Southern District of New York. Analysis related to tax incentives granted and benefits received as part of an economic development program. (*Government of the United States Virgin Islands v. JPMorgan Chase Bank, N.A. and related matter(s))*
- Provided deposition (April 2023) and trial (June/July 2023) testimony in a dispute related to workman's compensation premiums filed in the Superior Court of California, County of Riverside. Opinion related to accuracy of calculations assuming selected forms of compensation should be considered renumeration. (*State Fund Insurance Fund v. ReadyLink Healthcare, Inc.*)
- Provided deposition testimony (June 2023) in a whistleblower and breach of contract matter filed in United States District Court for the Northern District of Illinois Eastern Division. Analyzed and rebutted claim for lost wages and benefits. (Steinfeld *v. Jones La Salle*)
- Testified in deposition (January 2023) in a trade secret misappropriation, unjust enrichment, and tortious interference matter filed in United States District Court, District of Nevada. Analyzed and rebutted plaintiff's damages claims and reasonable royalty analysis for the alleged trade secrets. (*Newmark Group, Inc., et al. v. Avison Young (Canada) Inc., et al.)*
- Provided deposition testimony (January 2023) in a trade secret misappropriation and breach of contract dispute filed in United States District Court, Eastern District of Pennsylvania. Analysis included rebuttal of plaintiff's damages claims based on head start unjust enrichment. (*Le Tote, Inc. v. Urban Outfitters, Inc. et al.*)
- Provided deposition (April 2021) and trial (June 2022) testimony in a breach of contract and misappropriation of trade secrets matter filed in United States District Court, Southern District of California. Analysis included rebuttal of plaintiffs' damages claims and estimating lost profits to Counterclaimant and valuing Counterdefendant's unjust enrichment. (*Workplace Technologies Research, Inc. v. Project Management Institute*)

TESTIMONY EXPERIENCE (CONTINUED)

- Testified in deposition (October 2021) and trial (March 2022) in a trade secret misappropriation dispute filed the United States District Court for the Northern District of California. Scope of opinion included assessing reasonableness of plaintiff's unjust enrichment and reasonable royalty opinions and providing alternative calculations for damages. (*Comet Technologies, et al. v. XP Power, LLC*)
- Provided deposition testimony (March 2022) in a post-acquisition dispute alleging reasonably equivalent value was not paid for the acquisition of an independent physician's association (IPA). Scope of opinion included reviewing plaintiff's expert's analysis and assessing the reasonableness of underlying assumption, as well as opining on if the plaintiff was harmed by the transaction. (*SmartMed, Inc. v. FirstChoice Medical Group, Inc., et al.*)
- Testified in deposition (January 2022) in a dispute alleging multiple causes of action, including misappropriation of trade secret, trademark infringement, defamation, unfair competition, etc. filed in the United States District Court for the Northern District of California involving the movement of employees among competitors in the custom label industry. Scope of opinion included assessing the reasonableness of plaintiff's expert opinions regarding lost profits and unjust enrichment and providing alternative calculations for damages. (*The Best Label Company, LLC v. Custom Label & Decal, LLC, et al*)
- Provided deposition testimony (December 2021) during the class certification phase of a fraud/RICO matter filed by a putative class of individuals in the United States District Court for the Eastern District of New York. Analysis included feasibility and reliability of methodology for calculating damages on a class wide basis using ACH data provided by the ODFI and payday loan information for potential class members. *(Deborah Moss v. First Premier Bank)*
- Provided deposition testimony (September 2021) in a class action securities litigation filed in the United States District Court for the Western District of Pennsylvania. Scope of assignment included assessing reasonableness of plaintiffs' expert analysis of pro forma accounting adjustments and lost profits but for the alleged misleading public statements. (*Christakis Vrakas, et al. v. United States Steel Corporation, et al.*)
- Testified in deposition (May 2021) in a breach of contract matter filed in the Chancery Court of Delaware. Calculated lost profits from lost product sales. (*DBT Transportation Services v. Vaisala, Inc.*)
- Testified in depositions (January 2020, April 2021) in a matter filed in Superior Court of the State of California, County of Los Angeles involving the breach of partnership/participation agreements and allegations of fraud. Performed an accounting of payments due under the participation agreement and provided rebuttal analyses under the terms of the asserted partnership. (*RadioSurgery Solutions, LLC, et al. v. Select Healthcare Solutions Fund II, LLC, et al.*)
- Provided deposition testimony (April 2021) in a securities fraud matter involving the offering and sale of investments in an EB-5 Immigration Investor Program filed in United States District Court, Central District of California. Offered opinions on flow of funds and amounts paid compared to the representations of the Private Offering Memorandum and calculated amount of funds that had been misappropriated. (*Securities and Exchange Commission v. Charles C. Liu, et al.)*

TESTIMONY EXPERIENCE (CONTINUED)

- Testified in deposition (February 2021) in a breach of contract and misappropriation of trade secrets matter involving the issuance of a medical marijuana/cannabis license in Florida filed in the Superior Court of the State of Washington. Calculated damages in the form of the fair market value of the medical marijuana license, the development costs of the trade secrets, and a reasonable royalty for the trade secrets. (*Left Coast Ventures, Inc. v. Bill's Nursery, Inc., et al.)*
- Provided deposition testimony (January 2021) in a fraud matter involving the offer and sale of securities, issuance of cryptocurrency, and operating a pyramid scheme as part of a multi-level marketing company filed in the United States District Court, Central District of California. Offered opinions regarding the flow of funds, the underpayment of compensation to distributors, the ability of the company to continue operations, and the pecuniary gain of the defendant. (*Securities and Exchange Commission v. Daniel Pacheco, et al)*
- Testified in deposition (April 2020) in a class action matter alleging violations of the Equal Pay Act and Title VII of the Civil Rights Act of 1964 filed in the United States District Court, Central District of California, Western Division. Conducted forensic accounting analysis of revenue earned by and payments made to members of the US Soccer Men's and Women's national teams. (*Alex Morgan, et al. v. United States Soccer Federation, Inc.*)
- Provided deposition testimony (January 2020) in a litigation filed in the United States District Court, Central District of California involving allegations of violation of the Lanham Act and interference with prospective economic advantage. Analyzed damages and provided rebuttal opinions regarding opposing expert's calculations of lost profits and unjust enrichment. (*Multiple Energy Technologies v. Hologenix, LLC*)
- Provided testimony in deposition (January 2020) in a matter involving claims of theft of trade secrets, tortious interference, and conspiracy filed in the Circuit Court of Cook County, Illinois. Analyzed damages and provided rebuttal opinions regarding opposing expert's calculations of lost profits, unjust enrichment, and reasonable royalties. (*Newmark Group, Inc., et al. v. Avison Young (Canada) Inc., et al.*)

PROFESSIONAL MEMBERSHIPS

- Member, California Society of Certified Public Accountants, including Forensic Services Section
- Member, American Institute of Certified Public Accountants, including Forensic and Valuation Services Section
- Member, Association of Certified Fraud Examiners

SPEAKING ENGAGEMENTS

- Loyola Marymount University, Loyola Law School, Remedies (LAWJ-4016), Guest Lecturer, March 2024
- University of Southern California, Dornsife College of Letters, Arts & Science, ECON 434: Economic Analysis of Law (ECON 434), Guest Lecturer, April 2021
- University of California, Los Angeles, UCLA School of Law, Accounting and Financial Skills for Lawyers (Law 434), Guest Lecturer, November 2020
- University of Southern California, Leventhal School of Accounting, PACT Luncheon, Guest Speaker, Fall 2018
- Lost Profits and Damages Calculation: Everything You Need to Know in 2018, The Knowledge Group, Panelist, January 2018
- Cornerstone Research, Consumer Finance Class Actions and Enforcements, Moderator, November 2016
- University of Southern California, Leventhal School of Accounting, Accounting Ethics, Guest Speaker, Spring 2016 and Fall 2016

FIRM-WIDE SERVICE

- Cornerstone Research, Writing Coach, 2021 to present
- Cornerstone Research, Analyst Compensation Committee, 2007 to 2014
- Cornerstone Research, Risk Management Committee, 2002 to 2007

AWARDS & RECOGNITION

- Who's Who Legal: Investigations – Forensic Accountants, Global Investigations Review (2018-2023)

COMMUNITY ENGAGEMENT

- National Charity League, Inc., Fullerton Chapter, Patroness (2021 to present)
- National Charity League, Inc., Fullerton Chapter, Treasurer and Member of Board of Directors (2022 to present)
- National Charity League, Inc., Fullerton Chapter, Compliance Officer (2023 to present)

Appendix B
Documents Relied Upon by Carlyn Irwin

Academic Articles

- A. Mechele Dickerson, "The Myth of Home Ownership and Why Home Ownership Is Not Always a Good Thing," *Indiana Law Journal* 84, no. 1, 2009, pp. 189–237
- Cornia Boar et al., "Liquidity Constraints in the U.S. Housing Market," *The Review of Economic Studies* 89, no. 3, 2022, pp. 1120–1154
- David W. Berger et al., "Mortgage Prepayment and Path-Dependent Effects of Monetary Policy," *National Bureau of Economic Research*, Working Paper 25157, 2020, https://www.nber.org/system/files/working_papers/w25157/w25157.pdf
- Glenn B. Canner et al., "Recent Developments in Home Equity Lending," *Federal Reserve Bulletin*, 1998, pp. 241–251, https://www.federalreserve.gov/pubs/bulletin/1998/199804lead.pdf
- John C. Heaton et al., "Is Mark-to-Market Accounting Destabilizing? Analysis and Implications for Policy," *Journal of Monetary Economics* 57, no. 1, 2010, pp. 64–75
- John P. Shelton, "The Cost of Renting versus Owning a Home," *Land Economics* 44, no. 1, 1968, pp. 59–72
- Laurie S. Goodman and Christopher Mayer, "Homeownership and the American Dream," *Journal of Economic Perspectives* 32, no. 1, 2018, pp. 31–58
- Sumit Agarwal et al., "Searching for Approval," *National Bureau of Economic Research*, Working Paper 27341, 2020, https://www.nber.org/papers/w27341
- Sung Gon Chung et al., "Valuation Implications of FAS 159 Reported Gains and Losses From Fair Value Accounting for Liabilities," *Journal of Accounting, Auditing & Finance* 38, no. 4, 2023, pp. 833–856

Books and Book Chapters

- Jonathan Berk and Peter DeMarzo, *Corporate Finance*, Third Edition (Boston, MA: Person, 2014)
- Mark A. Allen et al., "Reference Guide on Estimation of Economic Damages," in *Reference Manual on Scientific Evidence*, eds. National Research Council Committees and Federal Judicial Center, Third Edition (Washington D.C.: The National Academies Press, 2011)

Expert Reports

- Expert Report of Amanda R. Kurzendoerfer, Ph.D., February 29, 2024, with Supporting Materials

- Expert Report of Michael J. Wallace, February 29, 2024, with Supporting Materials

Depositions

- Deposition of Bryan Martinez, August 10, 2023, with Exhibits
- Deposition of Saba Dossani, October 5, 2023, with Exhibits

Legal Documents

- Amended and Consolidated Class Action Complaint, *In re Wells Fargo Mortgage Discrimination Litigation*, March 24, 2023

Codes and Regulations

- 38 CFR § 36.4306
- 87 Fed. Reg. 63 (April 1, 2022)
- American Institute of Certified Public Accountants, "Statement on Standards for Forensic Services No. 1, Effective For Engagements Accepted on or after January 1, 2020," https://assets.ctfassets.net/rb9cdnjh59cm/2EDeYHGw1qX4euTcLzQgKl/0003d5ed1b392705439ab0d616fae1fc/ssfs-no-1.pdf
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- Fannie Mae, "Selling Guide: Fannie Mae Single Family," April 3, 2018, https://singlefamily.fanniemae.com/media/5151/display
- Freddie Mac, "Single-Family Seller Servicer Guide, Section 4203.4: Maximum LTV, TLTV and HTLTV Ratios," February 7, 2024, https://guide.freddiemac.com/app/guide/section/4203.4
- Freddie Mac, "Single-Family Seller/Servicer Guide," June 27, 2018, https://guide.freddiemac.com/ci/okcsFattach/get/1006782_2
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Publicly Available Reports

- Andreas Fuster et al., "Mortgage-Backed Securities," Federal Reserve Bank of New York Staff Reports, February 2022, https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr1001.pdf
- Consumer Financial Protection Bureau, "Older Americans Housing Guide: Using Home Equity to Meet Financial Needs," April 2023, https://files.consumerfinance.gov/f/documents/cfpb_jith-using-home-equity-guide.pdf
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- "What Is an Escrow or Impound Account?," *Consumer Financial Protection Bureau*, September 4, 2020, https://www.consumerfinance.gov/ask-cfpb/what-is-an-escrow-or-impound-account-en-140/
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- "Large Bank Consumer Mortgage Balances: 90 or More Days past Due: Including Foreclosures Rates: Balances Based," *Federal Reserve Economic Data*, https://fred.stlouisfed.org/series/RCMFLBBALDPDPCT90P
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- "Short-Term Interest Rates," *Organization for Economic Co-operation and Development,* https://data.oecd.org/interest/short-term-interest-rates.htm#indicator-chart
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Bates Stamped Documents

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Note: In addition to the documents on this list, I relied upon documents cited in my report and my figures to form my opinions.